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The lifecycle of casks: the production, use, and repurposing of casks in the Netherlands (1300-1800)

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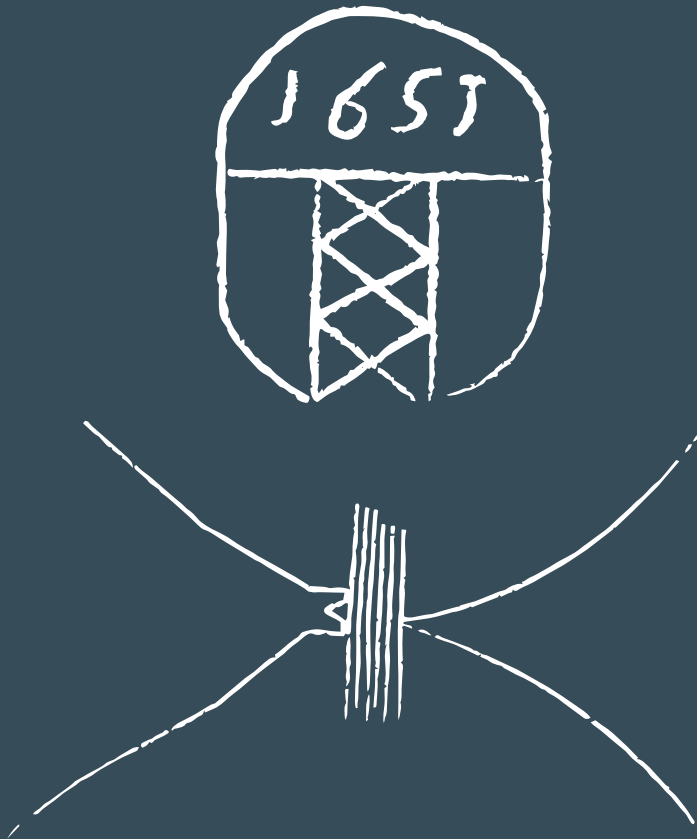
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7. Typology for cask marks



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7.1 Introduction

Casks frequently appear in archaeological contexts, particularly in urban and maritime settings, often bearing one or multiple marks. In archaeological reports, the documentation of these artifacts is superficial, often limited to descriptions of the casks' marks and dimensions. Yet, the study of cask marks represents a valuable and largely untapped source for understanding the socioeconomic dynamics of trade and consumption in the Netherlands in the Late Middle Ages and Early Modern period (1300-1800). To use cask marks as a source for such a study, it is first necessary to gain insight into their function and usage.

This chapter provides a foundation for such an understanding by presenting a typological classification of cask marks, systematically grouping them according to their function. In contrast to the sub-studies presented in the preceding chapters, this sub-study on cask marks does not focus on a single phase but rather on multiple phases of the cask lifecycle, namely production and their use as transport containers. No cask marks are currently known from the last phase, the repurpose of casks; therefore, this sub-study does not address the last phase of the lifecycle (Figure 7.1).

Cask marks were applied for various purposes, including indicating where and by whom the cask was produced, identifying its owner, recording its contents (quantification), and assessing the quality of both the cask and its contents (qualification). Identifying the reason marks were added to casks can help reconstruct the journey of a cask through the phases of production and use as a transport container. Cask marks can be seen as indicative of the various phases a cask has undergone, revealing the individuals and institutions involved in its trade and, potentially, the goods it contained.

Cask marks are particularly important as they bridge archaeological data and written sources, providing a crucial link between material culture and documentation in written sources (Figure 7.2). Documents such as trade records, shipping manifests, and urban regulations provide valuable context regarding the function and significance of these marks, while archaeological evidence sheds light on their practical use, the locations where marked casks were found, and the cargo contents in contexts such as shipwrecks. This multidisciplinary approach, which integrates archaeological and written sources, enhances the analysis of cask marks and provides a deeper understanding of trade practices in the Late Middle Ages and Early Modern period.

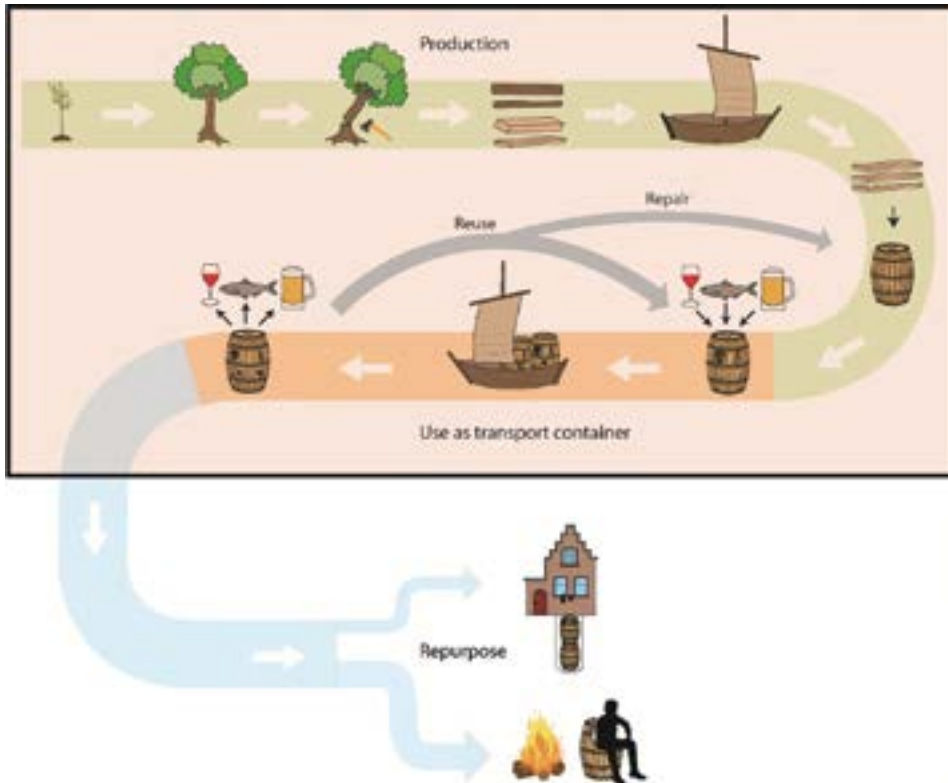


Figure 7.1: Schematic overview of the lifecycle of a cask. Production phase – green; its use as a transport container – orange; repurposing – blue. The frame highlights the part of the casks' lifecycle that is discussed in this chapter.



Figure 7.2: left: The placement of cask marks (Detail of Allegory of Commerce [Print of woodcut, no. PK.OP.20701], by Jost Amman, 1585. Copy at British Museum (England), reproduced under CC BY-NC-SA 4.0; right: cask head with several marks from the Burgzand Noord 4 shipwreck sunk in 1751 (Vos, 2012, 185. ID218).

7.2 Research problem and research question

The valuable data that can be derived from the numerous cask marks found in Dutch archaeological contexts—often uncovered as cargo in shipwrecks or as repurposed barrel-well shafts in urban excavations—remains largely untapped due to the absence of an integrated study on cask marks. Research has been undertaken in various academic disciplines, including archaeology, history, archival studies, and architectural history, but these investigations have only provided partial insights into the use of cask marks. A comprehensive study of their overall functions and characteristics has not yet been carried out.

Studies of cask marks from Dutch archaeological contexts are typically conducted only when large quantities of marks are found at a specific site, making them relatively rare. When these studies are conducted, they are site-specific and focus solely on the cask marks found at that location. Researchers often restrict their analysis to describing the cask marks without interpreting the reason they were applied or placing them within a broader framework, partly due to the lack of overview studies on this subject.

Conversely, research on cask marks using data from architectural history and historical studies tends to focus on why they were applied, although they are usually limited to a specific type of mark, such as wine gaugers' marks.²⁷¹ As a result, neither historical studies nor architectural-historical research have provided an overview of the functions of different types of cask marks.

This sub-study aims to address this gap by developing a typology for cask marks found in archaeological contexts, based on their intended function. The establishment of this typology is a crucial step in the systematic analysis and interpretation of cask marks in relation to their function, the merchandise contained in the casks, and broader trade networks. The central objective of this sub-study is to establish a typology for cask marks found in Dutch archaeological contexts from the Late Middle Ages and Early Modern period (1300–1800).

The main research question is

- How can cask marks from Dutch archaeological contexts (1300–1800) be classified into a typology and to what extent is the resulting typology suitable for cask marks from these context?

²⁷¹ Van Gangelen & Potze, 2017.

In order to address the main research question, the following sub-questions are considered:

- What are the main results of previous studies of cask marks?
- What are the distinguishing features of cask marks that are best suited to classify them into a typology?
- For what reasons were cask marks applied, and how can they be incorporated into a suitable typology for cask marks?

7.3 Research design and dataset

The research was conducted in multiple phases, reflecting the stepwise design of the study presented in this chapter, and is presented below in the chronological order. Each phase, some of which encompassed separate sub-studies, is discussed in detail in section 7.3.1, including their objectives, methodologies, and the specific source materials employed.

A separate section (7.3.2) addresses the compiled dataset, the Database WOODAN Cask Marks. This section provides a comprehensive account of how the dataset was constructed, the procedures used for its assembly, and the limitations of the data.

7.3.1 Research design

Historiography and the features of cask marks (Section 7.4)

The sub-study of the first sub-question, which focuses on previous research on (cask) marks, is presented as a historiography. This section compiles and analyzes the most relevant research findings from various academic disciplines—archaeology, history, and architectural history—to provide a comprehensive overview of existing knowledge on the subject. Based on the combined results of individual studies, insights have been gained into the features of cask marks and the reasons why they were applied.

Features of cask marks (Section 7.5)

The second sub-question focuses on identifying the most distinguishing features of cask marks, which form the basis for their classification. This allowed for initial insight into the range of features that cask marks can exhibit and which of these are most suitable for classification. At this phase of the research, the emphasis was on their features (classification) rather than on their functions (typology).

To answer the second sub-question additional research was conducted on the method of application using photometric stereo techniques on cask marks. Further analysis was carried out by examining descriptions of cask marks found in archaeological research reports from the Netherlands, where a relatively high number of cask marks have been found. These reports provided detailed descriptions of various features, enabling the identification of the full range of features and the most distinctive among them.

Typology for cask marks (Section 7.6)

The third and final sub-question focuses on developing a comprehensive typology based on the function of the different cask marks, encompassing all possible types of cask marks found on casks from Dutch archaeological contexts. Each type is defined by the specific function of the mark.

To understand the reasons why marks were applied, an overview was compiled by assembling cask mark types as identified in previous studies. This analysis incorporated the results of both archaeological investigations and historical studies based on written sources. In addition, the distinguishing features of cask marks identified were taken into account, providing a foundation for classifying marks according to their features before considering their function.

By comparing archaeological investigations and historical studies, an initial overview of the possible functions of cask marks was established. These mark types were subsequently analyzed based on the phases in the lifecycle of casks and the actors involved in their application. This comparative approach provided deeper insights into the significance of cask marks and allowed for the identification of missing types to be incorporated into the typology. This typology of cask marks, along with a discussion of the reasons for defining each type, is presented in section 7.6.

Description of individual cask mark types (Section 7.7)

The individual cask mark types are further described in section 7.7. This analysis of each subtype begins with a discussion of the reasons for application, followed by a description of the source material used, and a description of the types' distinguishing features.

For each subtype, the first step was to examine the available source material from archaeological studies that have, to some extent, explored cask mark functions. Additionally, overview studies of written sources and architectural-historical research were consulted, which are referenced separately in each discussion. In cases where information from these sources did not provide sufficient contextual insight, additional research of primary written sources was conducted.

The additional research into primary written sources focused mainly on sources directly related to the research period (1300-1800). Second, only primary source material originating from the provinces of Holland and Zeeland in the Netherlands was included. This regional focus is supported by the fact that the majority of cask production in the Late Middle Ages and Early Modern period (1300-1800) within present-day Netherlands took place in these provinces. This is confirmed by the significant concentration of coopers' guilds in these regions. Out of the 38 coopers' guilds established in the Netherlands, 24

(63%) were located in the provinces of Zeeland and Holland.²⁷² These regions showed the greatest potential for finding official regulations concerning cask marks and therefore became the focus. Within these regions, the archives of the coopers' guilds from Vlissingen and Alkmaar were consulted.²⁷³

To examine the cask marks associated with the next phase in the lifecycle of casks, the use as transport containers, material from the archives of organizations such as the College van de Grote Visserij for herring²⁷⁴ (advocacy organization for herring industry of Zeeland, Holland and West-Friesland) and the Generale Brouwers van Holland for beer (advocacy organization for beer producers, 1600-1800) was consulted.²⁷⁵ Furthermore, the *statuutboek* of the Dutch cities of Veere²⁷⁶ and Delfshaven²⁷⁷ were consulted for information on herring cask marks and *brandpackers'* registers.²⁷⁸

Identification marks played a crucial role use as transport containers, as they indicated the product contained in a cask, the individuals involved in the casks' trade, and corporate entities associated with the cask contents. To investigate these marks, legal sources from 1578-1915, such as wills, contracts, trade agreements, and testimonies, found in the *Oud Notarieel Archief* of Amsterdam were consulted.²⁷⁹ Legal documents from the cities of Gouda,²⁸⁰ Haarlem,²⁸¹ and Delft,²⁸² as well as the *Charterboek der Graven van Holland en Zeeland* (Charter Book of the Counts of Holland and Zeeland),²⁸³ were also examined for relevant passages— regulations and ordinances outlining guidelines on mark function, use, and application. Additionally, the archives of the *Middelburgsche Commercie Compagnie*²⁸⁴ (Middelburg Commercial Company) served as a valuable source for contextualizing cask marks in this phase. The data from the primary written sources were then used to further refine the typology and establish contextual information for each type of cask mark.

272 Oosterbaan et al., 2022.

273 ZA, GtV, *Archief Kuipersgilde*, 1545-1808; published in: Geest, 1664.

274 NA, ACGV, 1578-1857.

275 Yntema, 1992.

276 ZA, SV, no. 312, *Staetuytboeck Veere*, 1416-1699.

277 SD, ASD, 1568-1607.

278 A statute book contains the ordinances issued by urban authorities.

279 SAA, ONA, *Oud Notarieel Archief*, 1578-1915.

280 Published in: *Ordinance of the Coopers*, 1490; published in: Rollin Couquerque & Meerkamp van Embden, 1917.

281 Published in: Huizinga, 1911.

282 Published in: Soutendam, 1870.

283 *Charterboek der Graven van Holland en Zeeland*, 1299-1356.

284 ZA, MCC, 1720-1889; Unger, 1951.

Following the research on primary written sources, an assessment was made to determine which types still lacked sufficient contextual information. This was the case for marks applied during construction, for which interviews with present-day coopers were conducted to fill the gaps.

A typology of cask marks from Dutch archaeological contexts (Section 7.8)

In order to address the main research question, the developed typology was applied to cask marks from Dutch archaeological contexts to assess the typology's suitability. In section 7.8, the number of occurrences for each mark type is documented, along with a detailed description of its distinguishing features. These descriptions are compared to those provided in section 7.7, highlighting similarities, differences, and additional insights gleaned from archaeological source material.

The conclusion (Section 7.9)

In the conclusion, the central research question will be addressed by focusing on the suitability of the proposed typology in relation to cask marks from archaeological contexts. The most significant research results will be discussed by highlighting the similarities, differences, and additional insights gained from archaeological data when compared with the regulations concerning, and descriptions of, cask marks found in written sources. Furthermore, this sub-study aims to provide a foundation for further research on cask marks, for which specific recommendations are provided.

7.3.2 Dataset, the Database WOODAN Cask Marks

To apply the developed typology to cask marks from Dutch archaeological contexts, a dataset was compiled containing examples from the period 1300–1800. This dataset was not only used for this dissertation but has also been made publicly available online, supported by a grant from the Samenwerkende Maritieme Fondsen and in cooperation with the WOODAN Foundation.²⁸⁵ As a result, the database is referred to as the Database WOODAN Cask Marks.

The first step in developing the Database WOODAN Cask Marks was establishing a framework to systematically organize the relevant data used for describing cask marks. The database is organized into various fields for capturing both contextual and descriptive information. Contextual data fields were used to record details such as the find location, coordinates of find location, and associated archaeological context. Descriptive data fields were used to record the specifics of each cask mark by type, its placement on the cask, and the method of application. They were also

²⁸⁵ For the specific details of these collaborations, see the acknowledgements of this chapter.

used to record the dimensions of the marks and the number of cask components on which the mark appears. Furthermore, the database framework captures dating information, discerning between different dating methods, such as context-based dating, dendrochronological analysis, and dating derived from written sources.

The data included in the Database WOODAN Cask Marks had to meet a number of requirements. First, the cask mark had to originate from a Dutch archaeological context dating between 1300 and 1800. Second, contextual information was required, preferably drawn from a published research report. Third, at least one image of the cask mark had to be available to allow for visual comparison.

The first step in compiling the dataset was to request provincial and municipal archaeologists, as well as archaeological companies, to provide existing studies containing cask marks. The resulting cask marks were included in the dataset and supplemented with search results from the AGNES search engine²⁸⁶, which proved by far the most effective method of building the dataset. This tool enabled targeted searches across more than 180,000 archaeological documents using specific keywords.

The most effective keywords were *ton* (barrel/cask, n=5208 hits), *tonput* (barrel well, n=1700 hits), *merkteken* (mark, n=1166 hits), and *duig* (stave, n=817 hits). However, not every search result produced a cask mark to add to the database. Therefore, additional targeted searches were conducted using more specific keywords such as *eigendomsmerk* (property mark, n=80 hits), *handelsmerk* (merchants' mark, n=67 hits), (branding mark, n=28 hits), *kuipersmerk* (coopers' mark, n=20 hits), and *ijkmerk* (gauge mark, n=20 hits).

The inventory resulted in the largest dataset of cask marks assembled in the Netherlands, comprising a total of 1,021 cask marks: 405 from maritime archaeological contexts, 527 from urban archaeological contexts, and 89 from rural archaeological contexts. To ensure open access for other interested parties and researchers, the database has been made available online at www.woodancaskmarks.org. In this chapter, the cask marks included in the database are referenced by their ID numbers, as used in the database itself, for example, ID955.

The dataset containing 1,021 cask marks from archaeological contexts has certain limitations. The first concerns uneven regional representation. In regions where relatively little archaeological research has been conducted, representation is limited. This is evident from the fact that 461 out of 616 cask marks (75%) from terrestrial sites originate from the present-day provinces of Noord-Holland, Zuid-Holland, and Zeeland. This is partly due to the fact that a relatively large amount of archaeological research has been conducted in these provinces; between 2020 and 2024, 26.9% of all archaeological investigations in the Netherlands were carried out in the aforementioned three of twelve Dutch provinces.²⁸⁷ When compared to

²⁸⁶ Agnes: search engine for Dutch archaeology, n.d. (version 3.1). University of Leiden. Available online at: <https://agnesearch.nl/>. Last accessed on 01 May 2025.

²⁸⁷ Database Erfgoedmonitor, n.d.

the number of archaeological investigations carried out in the five northeastern provinces of the Netherlands (Flevoland, Friesland, Drenthe, Groningen, and Overijssel), which accounted for 19.5% of all archaeological researches during the same period,²⁸⁸ the disproportionate representation of casks originating from the western coastal provinces becomes evident. Nevertheless, the dataset clearly indicates that the occurrence of casks at terrestrial sites remains a phenomenon observed predominantly in the western coastal provinces.

Another limitation of the dataset concerns the availability of images. Because each cask mark required at least one image in order to be included, many examples discovered before 1990 were excluded. Most cask marks excavated during this period were either documented in reports without accompanying images or have not yet been published at all.

The most significant limitation of the dataset is its quantitative underrepresentation, when compared with the total number of cask marks in use during the research period. This becomes evident when comparing the number of cask marks in the dataset to the 500-year study period (1300–1800), revealing an average of only two cask marks per year. To assess the dataset's quantitative underrepresentation, this average number can be compared to the number of beer and herring casks in use. For example, between 1543 and 1545, approximately 950,000 beer casks were used in the nine major beer-producing cities in Holland, and in the first half of the 17th century, the annual demand for casks in the herring industry totaled approximately 350,000 casks.²⁸⁹ The dataset of cask marks should therefore not be considered an accurate quantitative reflection of the total number of casks with marks in circulation. However, the dataset can be used to represent the various types of cask marks that were in use during the period covered by this research. This should be taken into consideration when assessing the suitability of the typology for cask marks from archaeological contexts.

7.4 Historiography

As stated in section 7.2, cask marks have been studied across various academic disciplines, yet a comprehensive overview of marks applied to casks in the Netherlands between 1300 and 1800 is lacking.

Studies focusing on cask marks from Dutch archaeological contexts typically examine cask marks only when they are found in large quantities at a specific site, making such findings relatively rare and site-specific. In some cases, studies identify specific types of cask marks, but they are classified according to other features, such as the method of application. Meanwhile, research based on

²⁸⁸ Database Erfgoedmonitor, n.d.

²⁸⁹ Oosterbaan, 2023, 104.

architectural-historical data and written sources primarily focuses on the functions of marks. Studies from these academic disciplines are often limited to a specific type of mark and therefore do not provide a comprehensive view of the range of marks applied to casks.

To provide additional context to the combined research results of the academic disciplines focused on cask marks (historical studies, archaeological studies, and architectural-historical research), international studies have also been included in this historiography, with the criterion that the casks studied were part of a trade network that involved the Netherlands. Below, the relevant research results from studies based on written sources and architectural-historical research are presented, followed by an analysis of research based on archaeological source material.

Historical research based on written sources and architecture

The sub-study of marks based on written sources dates back to the late 19th century when house marks became the subject of several studies.²⁹⁰ House marks were explicitly linked to Germanic culture, and at times, they were even used as elements of Nazi propaganda.²⁹¹ Jenks and Mrozewicz suggested that the interest of Nazi scholars in house marks during World War II may have created obstacles for studies on written sources in the decades that followed.²⁹² However, the researcher Scherft conducted research in 1950 and 1951, focusing on a different type of mark, specifically, gauge marks and the gauging system in Breda.²⁹³ In the same decade, an architectural-historical study was conducted in 1957 on the Oude Kerk in Amsterdam, focusing on the count marks in the roof structure of the church.²⁹⁴ After these studies in the 1950s, no significant research on building marks was conducted for several decades.

In the 1990s, research on marks was once again taken up by both Dutch and international scholars. In 1992, a study that focused on the marks of medieval craftsmen was published in German.²⁹⁵ In the Netherlands, researcher Janse continued the study of marks with an investigation that provided an overview of various house marks used in constructions from the medieval period to the 18th century in different parts of the Netherlands and bordering Dutch-speaking regions.²⁹⁶

²⁹⁰ Michelsen, 1853; Homeyer, 1870.

²⁹¹ Reydon, 1940.

²⁹² Jenks & Wubs-Mrozewicz, 2022.

²⁹³ Scherft, 1950/1951.

²⁹⁴ Janse, 2004.

²⁹⁵ Engel, 1992.

²⁹⁶ Janse, 1990.

Research on personal identification marks was revived in 2010 by Zeven, who interpreted these marks as property indicators.²⁹⁷ In 2017, Van Gangelen and Potze published an article about an examination of marks on casks found in Groningen from different time periods. Although an archaeological discovery served as the starting point of their research, the study was primarily based on written sources and focused on wine gaugers' marks.

In 2022, an extensive study of merchants' marks was conducted by Jenks and Mrozewicz, with 29 letters from the Lübeck Civic Archives serving as the primary source material. Marks, including many merchants' marks found in letters from booty taken in the English Channel in August 1533 by privateers from Lübeck, provided insight into the property of the parties involved.²⁹⁸ A similar study is currently being conducted as part of the *Zee(uw)post* project, digitizing and transcribing marks from 17th- and 18th-century letters.²⁹⁹ These letters came from ships captured during the Anglo-Dutch wars, taken by English troops or their allies, and were eventually archived in the National Archives in London. Among them are numerous *cognossementen* (bills of lading) containing marks that are also noted as appearing on casks.

Studies drawing on written sources and those within architectural history share the characteristic of concentrating on a single type of cask mark. This narrow scope is largely a consequence of the nature of the source material, which typically sheds light on only one distinct purpose of cask marking practices. Consequently, the other functions for which marks could have been applied on casks received little or no attention in these studies. As a result, these studies have not yielded a comprehensive understanding of the full spectrum of marks that could appear on casks.

Archaeological research

Studies that focus on cask marks from archaeological contexts are usually confined to specific sites where marks are found in significant numbers, primarily in the research of shipwrecks. Since the number of shipwrecks in Dutch waters that are analyzed is limited, relevant studies on cask marks from shipwrecks outside of Dutch waters have also been included for a more complete historiography.

One of the groundbreaking studies on cask marks was conducted on the casks of the *San Juan* (1565), a shipwreck discovered in Red Bay, Canada, where nearly 200 casks were recovered.³⁰⁰ When the cask marks from this shipwreck were studied in detail by combining archaeological and historical analysis, the symbols

²⁹⁷ Zeven, 2010.

²⁹⁸ These merchants' marks are publicly available through the Database Merchants Marks, n.d.

²⁹⁹ Database *Zee(uw)post*, n.d.

³⁰⁰ Ross & Loewen, 1985/2007.

were successfully traced to merchants in France.³⁰¹ This study was significant as it used object attributes to deduce the production process and lifecycle of the casks. Loewen, the author of the study, later conducted similar research on *La Belle* (1686), identifying recycled items and rebuilt casks, and linking marks to transported goods.³⁰² He also challenged Kilby's assumption that markings were always made by the cooper who assembled the cask.³⁰³

In the 1980s, research on casks from shipwrecks and their marks focused on the wrecks of the *Betsey* (1781)³⁰⁴ and *William Salthouse* (1841).³⁰⁵ In research on the latter, cask markings were classified into six types: assembly marks, coopers' inspection marks, shippers' marks, Roman numerals, circular marks, and miscellaneous marks.

Casks from more recently discovered shipwrecks have also been studied, such as those examined by Rodrigues, who analyzed 33 casks from the *Mary Rose* (1545), focusing more on volume, contents, condition, and stowage than on marks.³⁰⁶ In 2010, Fawsitt analyzed 16 casks from a late 16th-century wreck in Drogheda, Ireland, establishing the reuse of head pieces, though she could not confirm whether they all belonged to the same consignment from France because of unidentified marks. For the *Vasa* (1628), a thorough examination of the casks was conducted, including the development of a typology and comparative research of the marks.³⁰⁷ However, a more in-depth study of the markings is needed.

In 2014, markings on medieval casks from the *Copper shipwreck* were identified by Ossowski as a merchants' mark belonging to Johann Pilge, a representative of the *Großschäffer* (senior trade administrator) of Königsberg, who traded copper in Bruges and was also active in Gdańsk.³⁰⁸ However, this is not the only possible interpretation. In an earlier study of merchants' marks from the *Copper shipwreck*, Śledź pointed out that their use was not limited to commercial transactions. He also raised the question of whether these marks signified ownership, identifying either the merchants exporting the goods or those who purchased them. He noted that a single merchant may have used multiple marks rather than just one. Some markings may have indicated quantity, batches of goods, or even quality control of casks.³⁰⁹

301 Loewen, 2007.

302 Loewen, 2017.

303 Kilby, 1971.

304 Shackelford, 1988.

305 Staniforth, 1987.

306 Rodrigues, 2005.

307 Ratcliffe, 2012.

308 Ossowski, 2014.

309 Śledź, 1979.

A more recent study on cask marks was conducted by Hansson, Linderson, and Foley on the *Gribshunden* (1495), found near Ekön Island, Sweden. While a thorough analysis was performed on the casks, further investigation is needed to determine the meaning of the markings and, more importantly, to link them to individuals, as they may have been applied in either the Netherlands or the Baltic region.³¹⁰

In the Netherlands, research of casks has been conducted for several decades. Most excavations, both maritime and terrestrial, have focused on describing the casks, only noting the presence of marks without further investigating their function and purpose of application.³¹¹ However, some studies have conducted more in-depth research of cask marks. Manders was among the first to examine cask marks from Dutch archaeological context, offering theories in his thesis about marks on casks from the shipwreck *Scheurak SO1*, where a classification based on the methods of application was used.³¹² Vos has written several sections about casks found in different ships in the Burgzand Noord area in the Dutch Wadden Sea but does not explore the cask marks in detail.³¹³ The marks on casks found on the *IJsselkogge* were studied by Schoute in 2017, although no ownership or content connections could be confirmed.³¹⁴

Oosterbaan studied 85 casks from the terrestrial site Vlissingen Groote Markt, classifying five mark types based solely on the marks' design.³¹⁵ Casks from the Dutch city of Leiden and its surroundings were examined by Hofman in his thesis, in which he proposed a typology distinguishing construction marks, count marks, ownership marks, and gauge marks.³¹⁶

One of the first outcomes of the present dissertation research on cask marks was the identification of the shipwreck *Burgzand Noord 4*. This was made possible by linking the marks on the casks from the wreck to individual merchants and plantations in Suriname. This led to the identification of the wreck as the frigate 't Hart, and the study provided specific insights into the trade network in which the ship operated (Chapter 8).³¹⁷

³¹⁰ Hansson et al., 2022.

³¹¹ Function emphasizes the operational or technical use of a mark, describing it as part of a process or mechanism. Example: The function of the cask mark was to indicate the approved volume of beer in the cask. Purpose of application emphasizes the motivation or reason for applying the mark, focusing on the "why" rather than the "how." Example: The purpose of the cask mark was to prevent fraudulent practices and ensure standardization.

³¹² Manders, 1996.

³¹³ Vos, 2012.

³¹⁴ Schout, 2017.

³¹⁵ Oosterbaan, 2015.

³¹⁶ Hofman, 2020.

³¹⁷ Tran et al., 2025.

Site-specific studies in Dutch archaeological contexts of cask marks consistently revealed the absence of a comprehensive analysis of cask marks. To address this gap, the Database WOODAN Cask Marks cataloguing Dutch cask marks was launched by Oosterbaan in 2024 (www.woodancaskmarks.org).³¹⁸ This database includes most of the marked casks discovered in archaeological contexts in the Netherlands, as well as a selection of cask marks documented in archival sources, and serves as the dataset for this sub-study.

7.5 Features of cask marks

To develop a comprehensive typology and ensure its effectiveness for cask marks from archaeological contexts, it is crucial to systematically document features of the appearance and application of marks. Three stand out as the most distinctive: the design of the mark, the method used for its application, and its location on the cask. Each feature exhibits its own variations, which are described below.

7.5.1 Design

There is a wide variety in the design of cask marks, ranging from simple scratches to a tally system to monograms with letters. There are also more elaborate cask marks, such as the well-known wine gaugers' marks, cities' coats of arms, and cask marks that consist of figurative shapes (Figure 7.6). The variation in the design of cask marks is their most distinctive feature, and they differ depending on why the mark was applied. For this reason, a detailed description is provided for each type of cask mark in section 7.7.

7.5.2 Method of application

Cask marks were applied using various tools: a timber scribe, knife, branding iron, compass, brush, and strike iron (Figure 7.3). It is highly likely that during the Late Middle Ages and Early Modern period, casks were also marked with chalk or charcoal, but these have not been preserved in the archaeological record. The method of application can serve as an indicator for classifying a cask mark, as most types can be distinguished by their cross-sectional shape. For example, a cask mark carved with a knife exhibits a V-shaped cross-sectional indentation, whereas a mark applied with a brush has been applied on the surface of the cask (Figure 7.3).

³¹⁸ Database WOODAN Cask Marks, n.d.



Figure 7.3: An overview of methods of cask mark application: Tools used and a schematic representation of their cross-sectional shapes. Sources: Timber scribe: Scribe for rejection during the gauging of casks [Tool, inv. no. 5708], unknown date. Museum de Lakenhal, Leiden, The Netherlands; Knife: Knife and fork with wooden handle [Tool, inv. no. 4280], unknown date. Museum de Lakenhal, Leiden, The Netherlands; Branding iron: Brand VOC [Branding iron, no. NG-1987-14-1], Rijksmuseum, Amsterdam, The Netherlands; Compass: Scribe and compass [Compass, no. 357.087], Collectie Looij, Nieuwenhoorn. Fotocollectie Rijksdienst van Cultureel Erfgoed, Amersfoort, The Netherlands, reproduced under CC BYSA 3.0. Brush: Brush [Tool, inv. no. NH49-141]. Unknown date. Museum Batavialand, Lelystad, The Netherlands, reproduced under CC BYSA 3.0; Strike iron: Strik iron with number 43 [Tool, no. NG-2013-22-5], Rijksmuseum, Amsterdam, The Netherlands.

Cask marks applied with a timber scribe, branding iron, compass, or strike iron generally appear as U-shaped indentations. The depth of these indentations helps determine the tool used. Those applied with a timber scribe or compass are generally deeper than those made with a branding iron or strike iron (Figure 7.3). The maximum depth of cask marks made with a timber scribe or compass from the archaeological excavation at Vlissingen Groote Markt is 6 mm, whereas those made with a strike iron or branding iron have a maximum depth of only 3 mm.³¹⁹ To investigate whether this distinction also applies to other sites, photometric stereo technique recordings were made of cask marks from the shipwreck *Scheurrak SO1*, which were applied with a timber scribe or branding iron (Figure 7.4). This sub-study confirmed the pattern, with a depth of 6 mm for cask marks made with a timber scribe and 4 mm for those applied with a branding iron. Additionally, this sub-study showed the clear distinction of the V-shaped cross section of a cask mark inscribed with a knife (Figure 7.4).

³¹⁹ The measurement data comes from the documentation of the Vlissingen Groote Markt excavation.

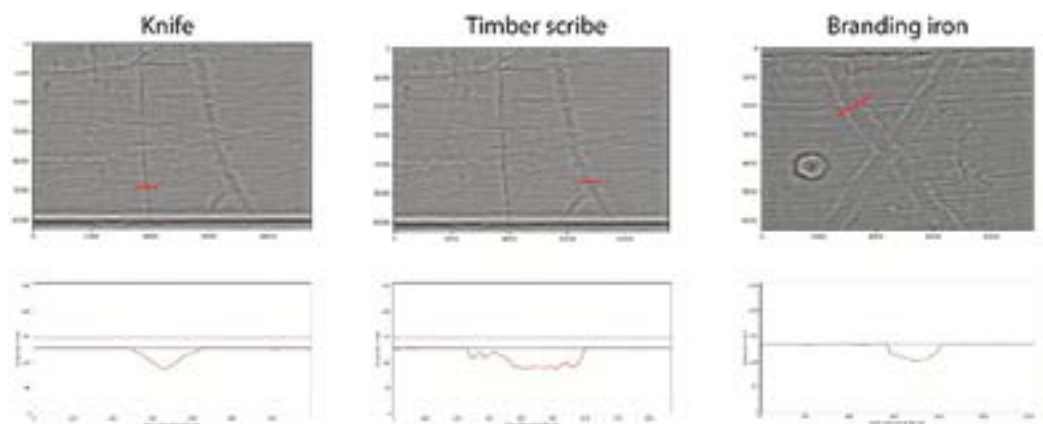


Figure 7.4: Cross sections of cask marks from the Scheurrak SO1 shipwreck using the photometric stereo technique, where the deeper areas of the cask marks are shown in progressively darker grey tones, allowing a cross section to be generated using grayscale values. Left: knife (Manders, 1996, find no. SO1658); middle: timber scribe (Manders, 1996, find no. SO1658); right: branding iron (Manders, 1996, find no. SO7992a).

The deep cask marks made with a timber scribe or compass can be distinguished from each other by their shape: those made with a compass have a circular form from a top view, while those made with a timber scribe vary in appearance. On the other hand, the shallow marks—applied with either a strike iron or a branding iron—can be distinguished by the presence of charred residue, which is only found on marks made with a branding iron (Table 7.1).

Table 7.1: Overview of the characteristics of the different methods of application of cask marks.

Method of application (tool used)	Cross-sectional shape	Depth	Charred residue?
Timber scribe	U-shaped	Relatively deep (ca. 6 mm)	No
Knife	V-shaped	Relatively deep (ca. 6 mm)	No
Branding iron	U-shaped	Relatively shallow (ca. 3–4 mm)	Yes
Compass	U-shaped	Relatively deep (ca. 6 mm)	No
Brush	Superficial	On the wood	No
Strike iron	U-shaped	Relatively shallow (ca. 3–4 mm)	No

7.5.3 Location of marks on casks

The location of a mark on a cask can also be used for its classification. Marks have been found on exterior and interior of heads, the bilge bottom, the bilge centre, and the bilge near the hole (Figure 7.5). The placement of a cask mark can help identify the actor who applied it. A mark on the interior of a cask's head, for instance, is considered a coopers' mark. Marks at this location could only have been made during the production phase before they were filled. In some cases, specific regulations also applied to the placement of marks, which is discussed further in section 7.7.

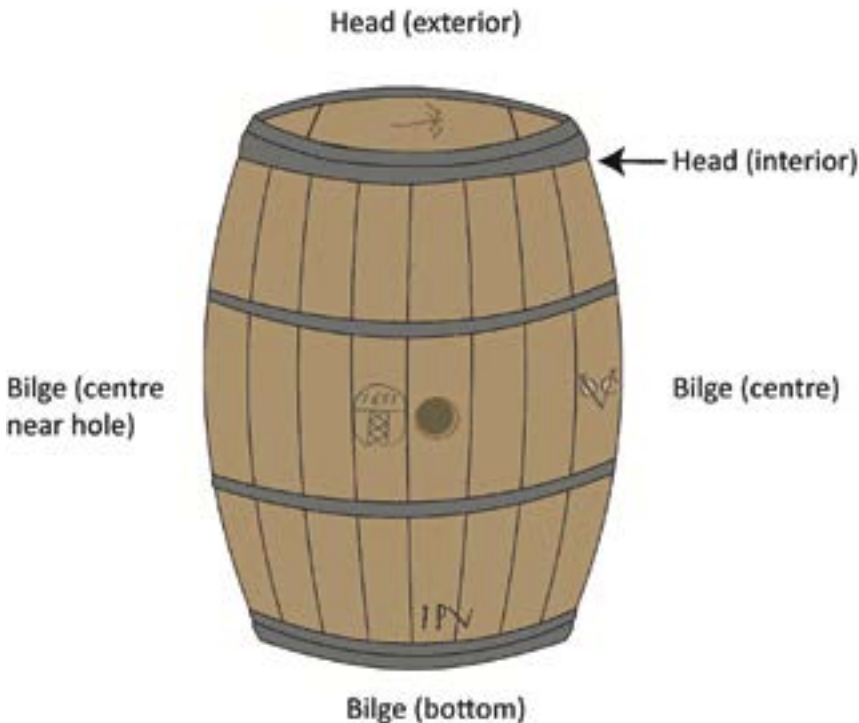


Figure 7.5: Locations of cask marks.

7.6 Typology of cask marks

The typology of cask marks is defined by the functions these marks fulfilled during the first and second phase of a cask's lifecycle, namely production and subsequent use as a transport container. For the purposes of this sub-study, these phases have been further subdivided into specific phases, each representing a step in the lifecycle during which cask marks could be applied. The precise phase in which a mark was applied was therefore integrated as a structuring element of the typology.

In addition, the actors responsible for applying the marks were taken into account. Because different actors, such as coopers, merchants, inspectors, or municipal officials, possessed distinct roles and responsibilities, the actor involved had a direct impact on both the functioning and purpose of application of a cask mark.

Finally, the typology also considers the trade networks in which casks circulated. These networks could vary considerably depending on the product being traded, with some casks restricted to local or regional markets, while others were part of international distribution systems. Such variation had a significant influence on the presence, type, and function of cask marks.

The various functions of cask marks that were identified, together with the aforementioned characteristics, were analyzed and formed the basis for the typology presented below (Figure 7.6).

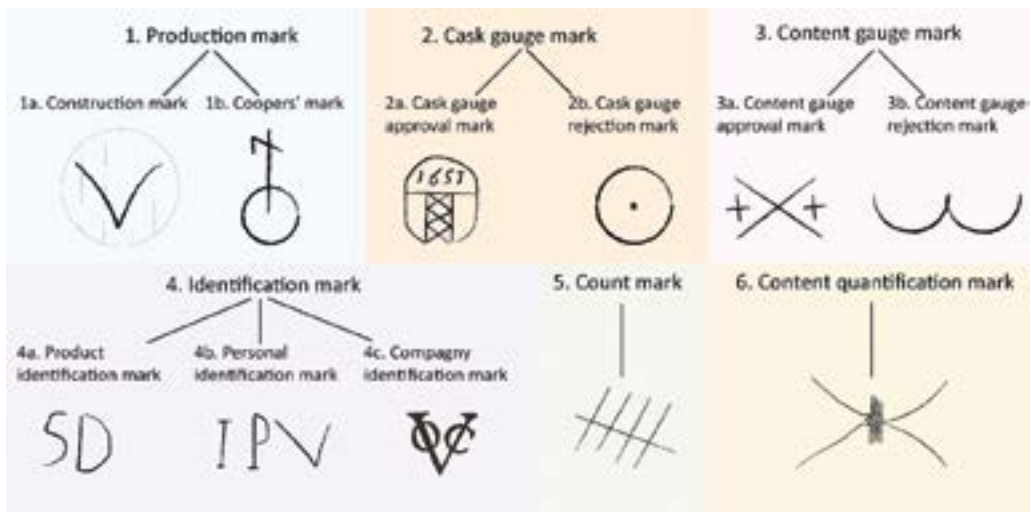


Figure 7.6: Typology of cask marks, including examples of mark designs.

The typology of cask marks used in this sub-study includes six main types, four of which are further divided into subtypes, bringing the total number of types to eleven (Figure 7.6). The typology is structured hierarchically into main types and subtypes, as some types show a great deal of similarity, despite serving a different function. This applies, for example, to the approval and rejection marks of both the casks and their contents. The hierarchical setup of the typology allows cask marks to be assigned as a main type if a subtype cannot be determined. This is particularly relevant for identification marks, as the features of subtypes often show strong similarities, making them indistinguishable in some cases.

Each of the individual mark types fulfils a distinct function and therefore carries a specific purpose. A marks' function is best understood when determined in tandem with the lifecycle of the cask in question (Figure 7.7). The lifecycle of a cask can be divided into

three main phases: production, use as a transport container, and repurposing. In the present sub-study, the repurposing phase has been deliberately excluded, as no evidence currently exists regarding the functions of cask marks applied during this phase.

To further understand the function of cask marks, it is also important to consider the individuals who applied them to the casks. For many of the mark types, specific actors were responsible for marking the casks, such as inspectors appointed by urban authorities, who were the only ones authorized to apply certain cask marks (Table 7.2). The sequence in which marks were applied to a cask is described below. In section 7.7, a detailed description is provided for each subtype, including the marks' function, the corresponding phases in the lifecycle of a cask, and the actors responsible for its application. In section 7.7, the defining features of each subtype are described, including appearance, method of application, and location on the cask.

The chronological sequence of cask mark application

Production marks were applied in the first phase of the lifecycle of a cask (Figure 7.7_1a, 1b). This main type is subdivided into construction marks and coopers' marks (Figure 7.6). A cooper, when assembling a cask, applied marks related to the construction of the cask, such as matching marks that indicated the correct assembly order of the cask's components. The final task of a cooper during the construction of a cask was to place his coopers' mark, indicating that he as the craftsman, had assembled the cask (Table 7.2).

Casks that had been approved could then be filled, initiating the second phase of their lifecycle: use as a transport container (Figure 7.7, 3a, 3b). For various product groups that were packaged and transported in casks, the gauging process was also carried out to ensure that the contents of the casks met the required specifications. For this purpose, inspectors appointed by the urban authorities were also employed, who concluded the content gauging process by placing a content gauge approval or rejection mark on the casks (Figure 7.6, Table 7.2).

When casks had been filled and were ready for transportation, further identification marks and count marks were applied. Identification marks might indicate the products packed in the casks or the persons or companies associated with the casks and their contents (see Figure 7.6 for these subtypes). There is a greater variety of actors who applied identification marks compared to the previously mentioned types of cask marks (Table 7.2). However, all identification marks were applied exclusively during the second phase of a casks' lifecycle (Figure 7.7_4, 5).

Count marks were applied once casks were in transit (Figure 7.6, Figure 7.7_5), and it is likely that count marks were applied by parties involved in the trading business (Table 7.2).

This type of mark was used to indicate the quantity of merchandise in the cask and was applied, for instance, to casks on ships when they passed through toll stations.

Upon a cask's arrival at its intended destination, the contents of certain products were measured (Figure 7.7_6) and a content quantification mark applied (Figure 7.6). In the case of a wine cask, excise duties had to be paid to the local urban authorities, depending on the amount of wine in the cask. To enforce this, inspectors applied this type of cask mark (Table 7.2).

In practice, not every cask was marked with all the marks outlined in the sequence above. Several factors came into play in the application of marks. First, the product for which the casks were made played a crucial role. For products intended for export, such as herring, an extensive gauging process was required for both the casks and the herring (Sections 7.7.2 and 7.7.3). In contrast, for casks intended for the local market, the process was less involved as quality control for these products was generally less stringent; there was no risk of interregional reputational damage, and producers and consumers often dealt with each other directly, making a system of identifying marks unnecessary. Second, both regional and diachronic differences in the regulations governing casks and their contents may have influenced how the casks were marked.

Variation in marks can also be seen on casks from the same city and period and intended for the same type of product, if the lifespan of these casks was interrupted. This is particularly relevant for casks found in shipwrecks, where the sinking of the ship unintentionally brought the lifecycle of the cask to an abrupt end. Although this occurred in only a small segment of the casks that were in use during the research period, it is particularly impactful for this sub-study since 405 out of the 1,012 casks in the dataset originate from shipwreck investigations (Section 7.3).

Equally, marks of the same type could be applied multiple times to an individual cask in the same usage period, if, for example, casks changed hands several times; multiple personal identification marks would then be applied to the same cask.³²⁰ Of course, several of the same type of cask mark on an individual cask could also result from its repeated use as a transport container without changing ownership. After a cask was emptied, it could be returned to the producer of a specific type of merchandise. The producer could then have the cask re-gauged to ensure it still met the required specifications before reusing it for shipping. Over time, this reuse could lead to the repeated application of certain cask marks. To avoid confusion, marks were sometimes removed by scraping them off the cask.

³²⁰ As can be seen, for example, on a cask head from the shipwreck *Burgzand Noord 4* (Figure 7.2, right), the personal identification mark 'IPV' was applied twice.

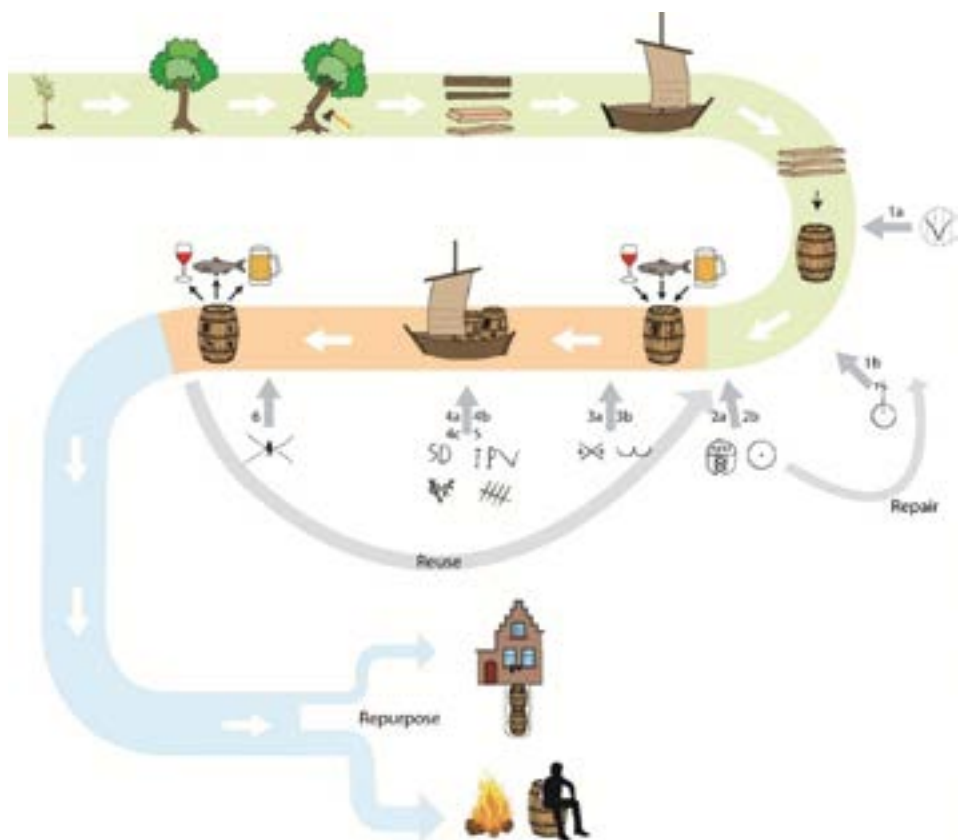


Figure 7.7: Schematic overview of the three phases in the lifecycle of a cask (production phase – green; use as a transport container – orange; repurposing – blue), with the type and the phase at which cask marks were applied.

Table 7.2: Overview of cask mark types. The mark functions are incorporated in the type name, followed by its position in the lifecycle of casks and the actor responsible for applying the mark.

Cask mark type	Phase in lifecycle	Applied by
1. Production mark		
1a. Construction mark	During production phase	Coopers
1b. Coopers' mark	During production phase	Coopers
2. Cask gauge mark		
2a. Cask gauge approval mark	End of production phase	Urban inspectors
2b. Cask gauge rejection mark	End of production phase	Urban inspectors
3. Content gauge mark		
3a. Content gauge approval mark	Beginning of use as transport container	Urban inspectors
3b. Content gauge rejection mark	Beginning of use as transport container	Urban inspectors

4. Identification mark		
4a. Product identification mark	During use as transport container	Producers/merchants
4b. Personal identification mark	During use as transport container	Merchants
4c. Corporate identification mark	During use as transport container	Producers
5. Count mark	During use as transport container	Merchants/toll officers
6. Content quantification mark	End use as transport container	Urban inspector (wine gaugers)

7.7 Cask marks by type

The following description of the individual cask mark types begins with a discussion of cask marks' function, followed by a description of the source material used to identify the mark, a description of its distinguishing features, and a rationale for defining them as a distinct type of cask mark.

7.7.1 Production marks

Production marks were added during the first phase of a casks' lifecycle, known as the production phase, by the coopers who crafted them. These cask marks are divided into construction marks and coopers' marks. Both served a distinct function and have a unique set of features, which are described below.

7.7.1.1 Construction marks

The distinctive function of the construction mark is the primary reason for establishing it as a separate type of cask mark in the typology. Construction marks were applied by coopers to measure, match, or indicate the sequence of the assembly of the staves or headboards. To contextualize the use of construction marks, regulations regarding this type of mark were sought in various written sources. However, no information on this subject was found. This is not surprising, given the practical nature of the mark; coopers had little reason to document this process, which could have ended up in the archives of, for instance, the coopers' guilds.

To gain more insight into the use of construction marks, contemporary coopers who craft casks using traditional methods were consulted. Coopers Cor de Groot (cooper of the Zaans Museum) and Erwin van Berkel (cooper of the Zuiderzee Museum) were consulted regarding the appearance, application method, and placement of marks on casks.

Design

According to De Groot and Van Berkel, construction marks can vary in appearance depending on their function, such as matching headboards, the correct placement

of dowels, and the orientation of the heads.³²¹ For example, matching headboards could be indicated by inscribing V-shaped marks (Figure 7.8_1), while the placement of the dowels could be marked with short, straight lines on the surface of the heads (Figure 7.8_2).

The beveled edges of the heads had to fit seamlessly into the croze, which was cut into the inside ends of the staves. Since a head is typically slightly oval, its orientation is crucial during placement. The correct position of the head could be indicated by concentric (Figure 7.8_3) or X-shaped marks (Figure 7.8_4), which extended across the ends of the staves. If these marks aligned properly, the orientation of the head within the staves was correct, ensuring a watertight construction.

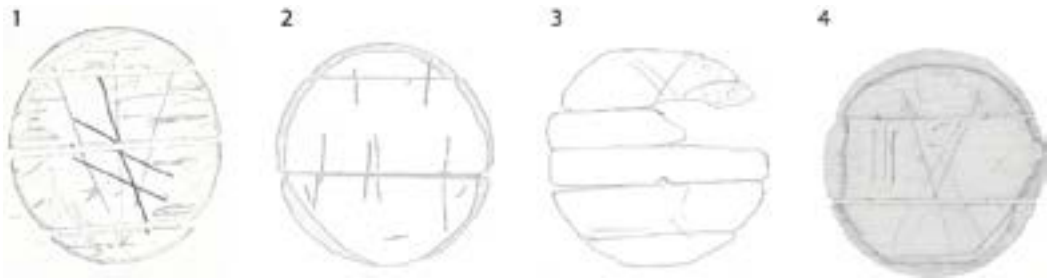


Figure 7.8: Examples of construction marks on heads. 1. Scheurrak SO1; 2. Burgzand Noord 14; 3. Burgzand Noord 4; 4. Scheurrak SO1. Sources: 1. Manders, 1996, 60. ID0059; 2. Vos, 2012, 307. ID0002; 3. Vos, 2012, 184. ID024; 4. Manders, 1996, 59; ID0039.

Another possible construction mark, intended to indicate the correct placement of the staves, consisted of a diagonal line running across multiple staves.³²² This mark would be used during production when the staves had to be temporarily disassembled and submerged in a water bath to make them flexible for bending into the desired curve. Cask marks were used to indicate the correct sequence of the staves and to ensure they were reassembled in the proper order.³²³

Method of application

De Groot stated that construction marks on the bilge were superficial or made with chalk or charcoal that disappeared in time. He also noted that construction marks, particularly on staves, would disappear from the bilge during the finishing process at the end of the construction phase. The bilge, when finished, had a smooth, continuous surface, meaning shallow marks and other production traces had been removed.

³²¹ Personal communication, de Groot, January 24, 2025; personal communication, van Berkel, September 30, 2024.

³²² Personal communication, de Groot, January 24, 2025.

³²³ As shown in Figure 7.17_3.

The construction marks preserved on casks recovered from archaeological contexts were most likely incised using a knife. In instances where circular forms were required (Figure 7.8_3), a compass would have been employed to inscribe the mark.

Mark location on casks

According to both De Groot and Van Berkel, construction marks were mainly applied to the head, where they served various functions, such as marking matching headboards and the position of dowels, and ensuring the proper orientation of the heads. Additionally, De Groot suggested that construction marks on the bilge that indicated the correct sequence of staves may have been removed during the finishing of the casks, making them no longer visible.³²⁴

7.7.1.2 Coopers' marks

Coopers' marks were applied to finished casks (Figure 7.7). Coopers applied marks to quantify their output, which was important because their wages were determined by the number of casks they produced. Additionally, coopers' marks served to trace the producer of the casks, which was particularly useful in cases where claims were made for damages resulting from a defective cask. The distinctive function of coopers' marks and their unique place in the lifecycle of casks justify the assignment of coopers' marks as a separate type in the typology.

Coopers' marks also played a crucial role in quality control; inspections were conducted immediately after production to verify whether the cask met the required standards. The mark was mandatory; the absence of a coopers' mark would result in the cask being rejected. Therefore, in various coopers' guilds in Dutch cities, the application of a coopers' mark was explicitly mandated, as seen in Haarlem in 1567³²⁵ and Breda in 1561.³²⁶ A resolution by the city of Groningen in 1602 also required the use of coopers' marks, but it applied only to casks intended for exportable contents.³²⁷

For some products intended for export, such as beer, specific ordinances have been preserved that explicitly state it was mandatory to apply a coopers' mark on casks with specific products. This applied, for example, to the Hoemburg beer casks intended for export, which were produced in Gouda in 1490.³²⁸ Additionally,

³²⁴ Personal communication, de Groot, January 24, 2025.

³²⁵ Published in: Huizinga, 1911, 114.

³²⁶ Scherft, 1950, 137.

³²⁷ Van Gangelen & Potze, 2017, 123.

³²⁸ Published in: Rollin Couquerque & Meerkamp van Embden, 1917, 105.

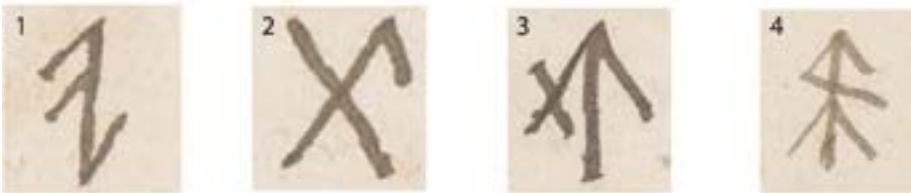
the beer casks produced in Haarlem in 1567³²⁹ and those in Amsterdam in 1663³³⁰ had to be marked with a coopers' mark.

Casks intended for herring, another major export product, were also required to have coopers' marks. The herring casks produced in Veere had to be marked on the bilge with a coopers' mark.³³¹ The College van de Grote Visserij, which provided regulations for many herring towns in Holland and West Friesland, also mandated a coopers' mark on herring casks.³³²

Design

The above-mentioned written sources provide no specific requirements for the design of coopers' marks. However, many examples reveal a design primarily composed of straight lines, with curved lines being the exception (Figure 7.9). This type of cask mark often incorporated a cross (Figure 7.9_2, 3, 5), an arrow cross (Figure 7.9_3, 4), or hash symbol (Figure 7.9_6). Monograms comprising a cooper's initials were used, as is shown in Figure 7.9_8 where "PM" stands for the cooper Pieter Mogghe. Additionally, Christian symbolism, for example, Chi-Rho, may also have been employed by coopers (Figure 7.9_7).

Coopers marks on herring casks, Amsterdam 1517



Coopers marks on herring casks, Zierikzee 1649



Figure 7.9: Examples of coopers' marks on herring casks in Amsterdam, 1517. The marks are linked to the following coopers: 1. Dirck Roemertsz; 2. Harrick Jansz; 3. Thys Kerstensz; 4. Willem Talinck; 5. Adriaen Imanse (ID1048); 6. Jacob Black (ID1057); 7. Jan Claese (ID1034); 8. Pieter Mogghe (ID1053). Sources: 1–4. SAA, AvB, Archief van de Burgemeesters, no. 5023/275, February 22, 1517; 5–8. ZA, GtZ, no. 5218/138, Lijst van leden kuipersgilde, 1649.

329 Published in: Huizinga, 1911, 423.

330 Published in: Smient & Smient, 1663.

331 ZA, SV, No. 312/38, January 19, 1566 [scan 42].

332 NA, ACGV, No.74/1, May 12, 1620 [scan 1].

Method of application

The method of application of a coopers' mark is specifically mentioned in several sources. According to a 1521 ordinance regulating a local brewery, the coopers' mark on beer casks produced in Schiedam had to be applied with an adze, making an imprint comparable to that made with a timber scribe.³³³ In Veere, a 1672 decree mandated that the coopers' mark be applied using a marking iron, either by striking or branding.³³⁴

Less permanent marks, such as chalk, charcoal, paint, or ink, were not prescribed. This is likely due to the fact that the coopers' mark had to remain visible until the full cask reached the final consumer. Applying the mark with a timber scribe (or adze) or a marking iron would ensure the marks' durability.

Mark location on cask

Various regulations specified the placement of coopers' marks on casks. Descriptions of 20th-century casks traditionally crafted say that they were placed on the cask heads.³³⁵ This is verified by archaeological explorations of numerous marked casks revealing coopers' marks typically applied on one of the heads.³³⁶

Written sources from the Netherlands provide similar information for herring casks. For instance, in Veere, a 1479 ordinance mandated that the coopers' mark be placed on the bottom of herring casks.³³⁷ Sources from the 17th century state that the mark should be placed on the *averechtschen bodem*, which likely referred to the interior of the head.³³⁸

Other written sources, however, mention a placement on the bilge, often specifying that it should be applied to the bung stave (the widest stave). This was the case for beer casks from Gouda in 1490,³³⁹ Haarlem in 1567,³⁴⁰ and Dordrecht in 1606.³⁴¹ The College van de Grote Visserij also mandated the placement of the coopers' mark on the bung stave of herring casks in 1583 and in 1620.³⁴² An 1583 ordinance not only required its placement on the bung stave but also specified its position between the third and bilge hoop.

333 Published in: Heeringa, 1904, 300.

334 ZA, SV 312/50, December 3, 1672 [scan 55].

335 Kilby, 1971, 29; Waelput, 2004, 95.

336 Houbrechts & Pieters, 1996, 247; Fawsitt, 2010, 64.

337 ZA, SV 311/21, Rood costumboeck, June 9, 1479 [scan 23].

338 ZA, SV 312/50, December 3, 1672 [scan 55].

339 Published in: Rollin Couquerque & Meerkamp van Embden, 1917, 216.

340 Published in: Huizinga, 1911, 425.

341 RAD, GC, No. 563/6, Ordonnantie op het maken van biertonnen, September 17, 1624.

342 NA, ACGV, No. 73, Placcaaten wegens de Groote Visserije, 1583 [scan 16]; NA, ACGV, No. 74/item 12, 1620.

Thus, coopers' marks could be applied on the bung staves or on the heads. On the heads it could be applied to either the interior or the exterior. An application on the interior of a head appears to be unique to coopers' marks. It is the only type of mark for which evidence of such placement has been found.

7.7.2 Cask gauge marks

The cask gauge mark was applied to casks at the end of the production phase, in preparation for use as transport containers. This cask mark was part of the gauging process carried out by inspectors (*keurmeesters*, or *branders*) appointed by urban authorities or guild boards. They assessed both the overall quality and the volume capacity of the cask. This inspection was crucial for ensuring the quality of the product being transported.

Casks were required to comply to specific regulations that varied according to their designated use. These regulations mandated the dimensions, the number of staves and hoops, the quality of the timber used, and a watertight construction (Chapter 5). If a cask met all the requirements, it was marked with a cask gauge approval mark. In contrast, casks that failed to meet the required criteria were marked with a cask gauge rejection mark.

The cask gauge mark was not only applied to new casks used for the first time, but it was also required for casks that were being reused. A mandatory annual inspection of old casks could also be ordered, as stated in the archives of the Coopers' Guild of Amsterdam in a 1609 ordinance.³⁴³ Subjecting used casks to the gauging process ensured that they were compliant with the same quality control measures as new casks, maintaining standards for their subsequent use.

The distinctive function of the cask gauge mark for both approval and rejection, their unique function in the lifecycle of casks, and their application by an urban inspector justify assigning them separate subtypes in the typology.

7.7.2.1 Cask gauge approval marks

The cask gauge approval mark was applied to casks by urban inspectors upon confirmation that the cask met all the requirements of the gauging process. The prescribed dimensions, for instance, had to be checked using certain gauge instruments, a ring, bracket, or calipers (Figure 5.5).³⁴⁴ A cask bearing this type of mark could then be used as a transport container. The cask gauge approval mark communicated to producers, traders, and consumers that the gauging process had been properly carried out. If, however, the cask was found to be defective or insufficient due to poor craftsmanship or an inadequate gauging process, the

³⁴³ De Waard, 2002, 21.

³⁴⁴ Oosterbaan, 2023, 108.

mark could be used to trace the city of origin and a compensation claim could be made for any damages incurred damages or other deficiencies.

Cask gauge approval marks are mentioned extensively in written sources, and thus a consistent function can be deduced, both diachronically and geographically. The earliest mention of the use of the cask gauge approval mark dates back to 1490, when it was mandated that the city of Gouda's *brant van de stede* (the city's brand mark) had to be placed on Hoemburg beer casks.³⁴⁵ This is also the case with beer casks from Schiedam in 1521,³⁴⁶ herring casks from Vlissingen in 1545,³⁴⁷ and beer casks from Dordrecht in 1588 and 1606.³⁴⁸ In these ordinances, the cask gauge approval mark was the city's brand mark, known as the *stede brant* or *stadts segel*. For herring casks, the mark was called the *tonnebrand* (cask brand mark) or *stede brand*.³⁴⁹ In the latter part of the research period, in the 18th century, the cask gauge approval mark was still mandatory, for example, a 1743 ordinance from Leiden required a cask mark in the form of the city's coat of arms with the year of application to be placed on herring and beer casks.³⁵⁰ This type of cask mark appears to have been used on casks for a wide range of products. As mentioned above, both beer and herring casks were required to be marked with the cask gauge approval mark. The same was the case for butter casks, according to the ordinances of the Alkmaar Coopers' Guild in 1664.³⁵¹ Additionally, in Breda, casks produced abroad, such as wine casks, had to be inspected annually from 1665 onwards.³⁵²

Design

In written sources, the cask gauge approval mark is referred to as a city's brand mark. Only in a few cases is the design of the mark depicted in a written source, such as for the city of Breda with its coat of arms (Figure 7.10_2). However, on actual casks uncovered by archaeological research, this type of cask mark can often be recognized by a design of a city's coat of arms, for example, Amsterdam (Figure 7.10_1)—the year is also given—and Leiden, with its crossed keys representing the city (Figure 7.10_3).

Besides a *brand* mark, a city could also be represented by a single letter or a letter combination. In Delft, during the 17th century, the letter "D" was used as an cask

345 Published in: Rollin Couquerque & Meerkamp van Embden, 1917, 105.

346 Published in: Heeringa, 1904, 300.

347 ZA, GtV, No. 9, Minuut-notulen kuipersgilde, 1775–1808.

348 RAD, GC, No.551, Ordonnantie op het branden van tonnen, 1588; RAD, GC, No. 563/item 13, 1620.

349 Beaujon, 1885, 9–10; Dijkman, 2011, 220; Published in: Heeringa, 1904, 306; Houbrechts & Pieters, 1996, 247.

350 Published in: Luchtmans, 1743, 9.

351 Published in: Geest, 1664, item 47.

352 Scherf, 1950, 155.

gauge approval mark,³⁵³ and in Breda, starting in 1587, the cask mark was the letter combination “BRE” (Figure 7.10_5). However, from 1777 onwards, this system was modified³⁵⁴ and the cask gauge approval mark was replaced with a single letter that changed annually. This meant that the specific year a cask was gauged could be identified directly from the mark, although with the disappearance of an easily recognizable urban coat of arms, required users to have greater familiarity with the marks, which varied annually.³⁵⁵ For certain products, a simpler design than a coat of arms was used for the cask gauge approval mark. On herring casks in Amsterdam the *tonnebrand*, indicating that certain specifications had been met, consisted of a circle with a cross inside it (Figure 7.10_4).

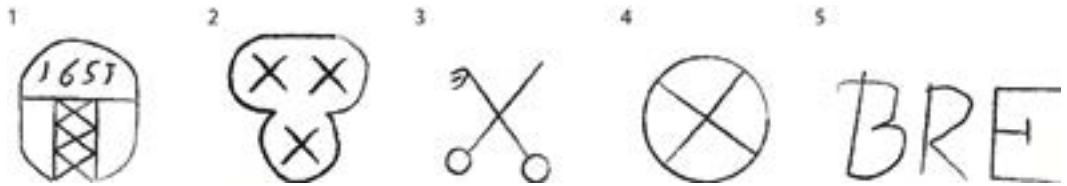


Figure 7.10: Examples of cask gauge approval marks. 1. Cask mark of Amsterdam; 2. Cask mark of Breda; 3. Cask mark of Leiden; 4. The *tonnebrand* on herring casks from Amsterdam; 5. Cask mark of Breda. Sources: 1. Van Gangelen & Potze, 2017, 125; 2. Scherft, 1951, 61; 3. Verduin, 2019, 255; 4. SAAvB, No.275, February 22, 1517; 5. Scherft, 1951, 55.

Method of application

The majority of written sources do not provide specific instructions on how the cask gauge approval mark was to be applied. However, the terminology used, such as *stede brand*, suggests the use of a branding iron. Additionally, a design of a city's coat of arms, which was used frequently, was typically so intricate that etching it with a timber scribe or knife would have been arduous.

The passages in written sources that specify how this type of cask mark had to be applied also mention the use of the branding iron. This was the case for butter casks from Delft, for example, in the first half of the 16th century, which had to be marked with a *gloeïend ijzer* (red-hot iron).³⁵⁶

Mark location on cask

The cask gauge approval mark was typically applied on the bilge of the casks.³⁵⁷ In certain cases, even more specific guidelines were provided: marks had to be

³⁵³ Van Gangelen & Potze, 2017, 125.

³⁵⁴ Scherft, 1951, 56; Van Gangelen & Potze, 2017, 125.

³⁵⁵ Scherft, 1951, 56; Van Gangelen & Potze, 2017, 125.

³⁵⁶ Published in: Soutendam, 1870, 194.

³⁵⁷ RAD, GC, No. 551, May 5, 1588; RAD, GC, No. 563, September 17, 1624; Published in: Soutendam, 1870, 194.

applied either on the joints of the staves or, more commonly, on the widest stave. Evidence of this is found in an ordinance from 1583 in the archives of the College van de Grote Visserij concerning herring casks that mandated placement of the mark on the widest stave, positioned between the bilge hoop and the third hoop.³⁵⁸

7.7.2.2 Cask gauge rejection marks

If a cask did not meet the requirements for that specific cask, the city inspector would apply the cask gauge rejection mark. Rejected casks could be repaired by a cooper, after which the assessment process would be repeated. When the required repairs were completed, the inspector would replace the cask gauge rejection mark with the cask gauge approval mark and the cask would again be fit for use.³⁵⁹

If the same cask was submitted for inspection again without the required repairs or if the cooper had removed the cask gauge rejection mark, the inspector was authorized to remove the casks' *kimmen* (bottom part of the staves) and claim ownership of the cask according to an ordinance of the coopers' guild in Dordrecht in 1602³⁶⁰ and an ordinance of the College van de Grote Visserij.³⁶¹

Although the cask gauge rejection mark is mentioned less frequently in written sources than the cask gauge approval mark, a consistent pattern of use throughout the research period can be identified. The oldest known reference to this type of cask mark dates back to 1583 and states that rejected herring casks should be marked.³⁶² This cask mark type is also mentioned in regards to beer casks in Dordrecht in 1606³⁶³ and herring casks in Rotterdam in 1743.³⁶⁴

Design

In some of the written sources, the design of the cask gauge rejection mark is mentioned. For example, the cask gauge rejection marks on herring casks from Rotterdam in 1743 came with the following prohibition: "*Sal niemand bestaende Merken nog de circels by de keur-meester op eenige afgekeurde tonnen gesteld uyt te houwen*" (No one shall remove the existing marks or the circles on any rejected casks placed there by the inspector).³⁶⁵ This implies that a circular design was one of the designs used as cask gauge rejection mark. Similarly, for herring casks from Amsterdam, inspectors in 1579 were requested to inspect and mark

358 NA, ACGV, No.73/16, 1583 [scan 16].

359 NA, ACGV, No.74 /item 17, May 12, 1620 [scan 3].

360 RAD, GC, No. 559, Resolutie van de Staten van Holland, 1663.

361 NA, ACGV, No.74 /item 17, May 12, 1620 [scan 3].

362 NA, ACGV, No.73, 1583 [scan 16].

363 RAD, GC, No. 563, September 17, 1624.

364 Published in: Waesberge, 1734, item 40.

365 Published in: Waesberge, 1734, item 58.

the casks with circles (*"te keuren ende circulene"*), which suggests that approval or rejection marks were circular in design.³⁶⁶

Method of application

No sources have been found that prescribe the method of applying cask gauge rejection marks. However, given a circular design, it is very likely that a compass or a similar tool was used.

Mark location on cask

The location of the cask gauge rejection mark was sometimes specified, with instructions to place it on the bilge of the cask, as was the case with beer casks in Leiden in 1743.³⁶⁷ In an ordinance issued by the College van de Grote Visserij, not only was the bilge indicated as the location of the mark, it also had to be applied at the midpoint between the third hoop and the *hals hope* (chime hoop).³⁶⁸

7.7.3 Content gauge marks

Content gauge marks were applied during a casks' use as a transport container, initiating the second phase of a casks' lifecycle. Certain products had to be inspected by officials and had to meet specific quality standards, as was customary with herring where inspectors checked the quality of the fish and ensured it had been properly packing and salted. If the contents of a cask met all regulations, they were approved and the cask was marked with a content gauge approval mark. Conversely, contents that failed to meet the required criteria were rejected and the cask marked with a content gauge rejection mark.

The content gauge marks differ from the cask gauge marks in that they apply to the contents rather than the cask itself. Furthermore, content gauge marks were applied at a later phase than cask gauge marks. Another example of a cask mark similar to the content gauge mark is the product identification mark, though it was applied by the producers of the merchandise or someone affiliated with them, and did not require inspection.

The distinctive function of content gauge marks for both approval and rejection, their unique function in the lifecycle of casks, and their application by a city inspector, warrant assigning them separate subtypes in the typology.

³⁶⁶ Published in: *Smient & Smient*, 1663, 466.

³⁶⁷ Published in: *Luchtmans*, 1743, 15.

³⁶⁸ NA, ACGV, No.73, 1583.

7.7.3.1 Content gauge approval marks

The content gauge approval mark was applied to casks by inspectors upon confirmation that the contents met all the prescribed requirements of the gauging process. A cask bearing this type of mark could then be transported or traded. The content gauge approval mark assured producers, traders, and consumers that the gauging process had been successfully completed.

This type of cask mark was primarily used for products exported from the coastal regions of the Netherlands in the Late Middle Ages and Early Modern period, with products such as beer, herring, and dairy products, for example, butter.³⁶⁹ Specific regulation of the content gauge approval mark have predominantly been documented in written sources in the context of herring casks. The following discussion therefore focuses on the cask marks for herring only.

Dutch herring was exported not only throughout Europe but also beyond, where Dutch herring was regarded highly for its quality. To maintain this reputation, gauge regulations were established to ensure quality control and to safeguard the prominent position of Dutch herring in the international herring trade.³⁷⁰

The first historical reference to regulations for the Dutch herring fishery is an ordinance of 1519, which applied to Holland and Flanders.³⁷¹ The ordinance was established to create a level playing field for these two regions, to minimize differences, and to prevent disputes. The 1519 ordinance prescribed that any herring deviating from the required standard must be packed in separate casks. This applied to herring that was classified as *ydel* (herring without fat or roe), *kuitziek* (herring with underdeveloped roe), and or *wrack* (herring with defects). Casks containing inferior herring could have the *backbrand* applied, but that was considered optional. The authorities of cities where herring was packed were, in other words, free to implement their own regulations for deviation from the standard.³⁷²

Veere, in Zeeland, was one of the cities in the 16th century that decided on an optional inspection and appointed inspectors to oversee quality control of its herring export. The *Staetuytboeck Veere*, issued in 1544, stated that inspectors were required to removed herring with defects.³⁷³ The following distinctions were made: *ydelen* (lean herring, without fat or roe), *hoofdeloosen* (headless herring, possibly improperly processed), *kuitsieken* (herring with underdeveloped roe), *verloosen* (herring with defects, e.g., missing fins or tail), *velloosen* (herring without skin, possibly due to spoilage or improper processing), and *wammelosen* (soft,

369 Yntema, 1992, 3; Unger, 2001; Dijkman, 2011, 222-22.

370 Dijkman, 2011, 353.

371 Beaujon, 1885, 9; Dijkman, 2011, 222.

372 Beaujon, 1885, 9.

373 ZA, SV, No. 312/80, August 4, 1568.

limp herring, likely of poor quality or spoiled). In some cases, the mark indicating these deficiency classifications has been preserved, such as for *kuitsieken* (Figure 7.11_1) and *wammelosen* herring (Figure 7.11_2). In Veere a further distinction was made for *wracken* herring, the lowest quality grade, with its own symbol (Figure 7.11_3).

At the end of the 16th century, several factors affected the quality control of herring. Fishing as such was curtailed by the Eighty Years' War because sea warfare created unsafe conditions for fishermen.³⁷⁴ At the same time, ongoing concerns about quality control led to adjustments in the gauging process. Whereas in the early 16th century herring had been inspected after being packed into transport casks, by the late 16th century the sorting process was carried out aboard the herring busses by the crew.³⁷⁵ This change of method affected the way quality control was conducted, as recorded in a series of ordinances from the 1580s.³⁷⁶ These ordinances stated that, after sorting, the herring was brought ashore in *zeetonnen* (sea casks) after which inspectors verified whether the sorting had been done properly. The shipmasters were required to place their personal mark on the *zeetonnen* to ensure the traceability of the person responsible for the sorting.

Upon a successful inspection of the sorting, the herring could be packed into casks for transport. This process was done by packers sworn-in by the city. They were responsible for properly salting the herring and filling the casks. Each packer had a unique mark that had to be placed on the full herring cask and recorded in an official register. Such registers from the city of Veere have been preserved and include lists of packers between 1540 to 1615.³⁷⁷ The lists are organized by function: *keurmeesters* (inspectors), *brandpackers* (responsible for packing the herring in the casks), *hoogers* (responsible for topping up the casks with herring after they had been compacted), and *souters* (responsible for salting the herring). Individual marks were consistently recorded only for the *brandpackers*, and from this period onwards these marks functioned as content gauge approval marks on herring casks (Figure 7.11_4, 5).

The ordinances from the 1580s proved insufficient in the early 17th century to prevent new malpractices from in the herring fishery. Much of the herring caught in the North Sea was transported directly to foreign ports by Dutch fishermen, thus evading the official quality control process.³⁷⁸ To address this issue, several proclamations were issued between 1604 and 1621 that required various marks to be applied to herring casks in Dutch harbors, depending on the time of year

³⁷⁴ Van Bochove, 2004, 3–4.

³⁷⁵ Beaujon, 1885, 40.

³⁷⁶ Beaujon, 1885, 41.

³⁷⁷ ZA, SV, No. 1898, *Registre roerende den cupers, 1540–1638*.

³⁷⁸ Beaujon, 1885, 47.

the herring was caught and on the destination country or city.³⁷⁹ For the main regions of export, distinct marks had to be applied to the casks to differentiate destinations, such as the *Roansee brand* for export to France and Flanders (Figure 7.11_6) and the *Keulsche brand* for exports to the Cologne region.³⁸⁰

Additionally, the period in which the herring was caught had to be indicated with a mark on the cask. This also served as a quality mark, as the herring varied in quality throughout the fishing season due to fluctuations in fat content and the development of roe (*hom*) and milt (*kuit*). The herring fishing season had three periods determined by the development phases of herring: young herring caught before the spawning period, during the spawning period, and post-spawning. In Rotterdam's 1743 classification, for example, marks corresponded with these three seasons:³⁸¹

- *Jacobi brand* for herring caught after July 25, marked with a "J";
- *Bartholomeus brand* for herring caught after August 24, marked with a "B";
- *Kruys brand* or *Grote brand* for herring caught after September 14, marked with an "X."

Just nine years later, this threefold classification also appeared in *Het Algemeen Kunstwoordenboek der Wetenschappen* with distinct terminology and corresponding marks for herring originating from Holland:³⁸²

- *Maatjes* herring, caught early in the herring season, was very tender in flesh and fat, with few or no entrails. Based on their quality, they could be classified as maatjes herring (Figure 7.11_7), *maatjes wrak* herring (Figure 7.11_8), or *maatjes wrak-wrak* herring (Figure 7.11_9).
- *Volle* herring, caught around St. Bartholomew's Day (August 24), had fully developed roe or milt. Depending on their quality, they were categorized as volle herring (Figure 7.11_10), *volle wrak herring* (Figure 7.11_11), or *volle wrak-wrak herring* (Figure 7.11_12).
- *Brand* herring, caught in the latter part of the herring season, were assigned a mark consisting of the city's coat of arms alongside a double circle (Figure 7.11_13). No further identification mark was prescribed for this category.³⁸³

It is unclear whether the classification of 1743 replaced the one of 1734 or if both were used simultaneously. What remained consistent, however, was the requirement that marks indicating both the period of catch and the destination were mandatory on herring casks destined for export.

379 Beaujon, 1885, 48.

380 Beaujon, 1885, 47.

381 Published in: Waesberge, 1734, item 29.

382 Westerhovius, 1743, 354–355.

383 Westerhovius, 1743, 354–355.

Design

The design of content gauge approval marks varied depending on their significance, but simple designs were generally preferred. This type of cask mark has only been found in the herring fishery, and thus information on its design applies only on content gauge approval marks for this product.

Some examples of simple quality-related marks are shown in Figure 7.11_1-3. Likewise, marks indicating the period in which the herring was caught were usually simple, often consisting of a single letter referring to a religious feast day that occurred around the period of the herring season when the fish was caught, such as the letter "J" (*Jacobi brand*), "B" (*Bartholomeus brand*), and "X" (*Kruys brand*). The method used from 1743 onwards to indicate the catch period of herring was also a simple marking system. Each fishing period was assigned a classification in which the number of elements in the mark also conveyed the quality of the herring (Figure 7.11_7-13). For example, the mark for high-quality young herring consisted of two half circles, and the mark for lower-quality young herring was a single half circle (Figure 7.11_7, 8). In contrast, the *brandpacker's* mark, which functioned as a content gauge approval mark, was generally more intricate. These marks varied in design but often featured geometric patterns similar to those of coopers' marks.

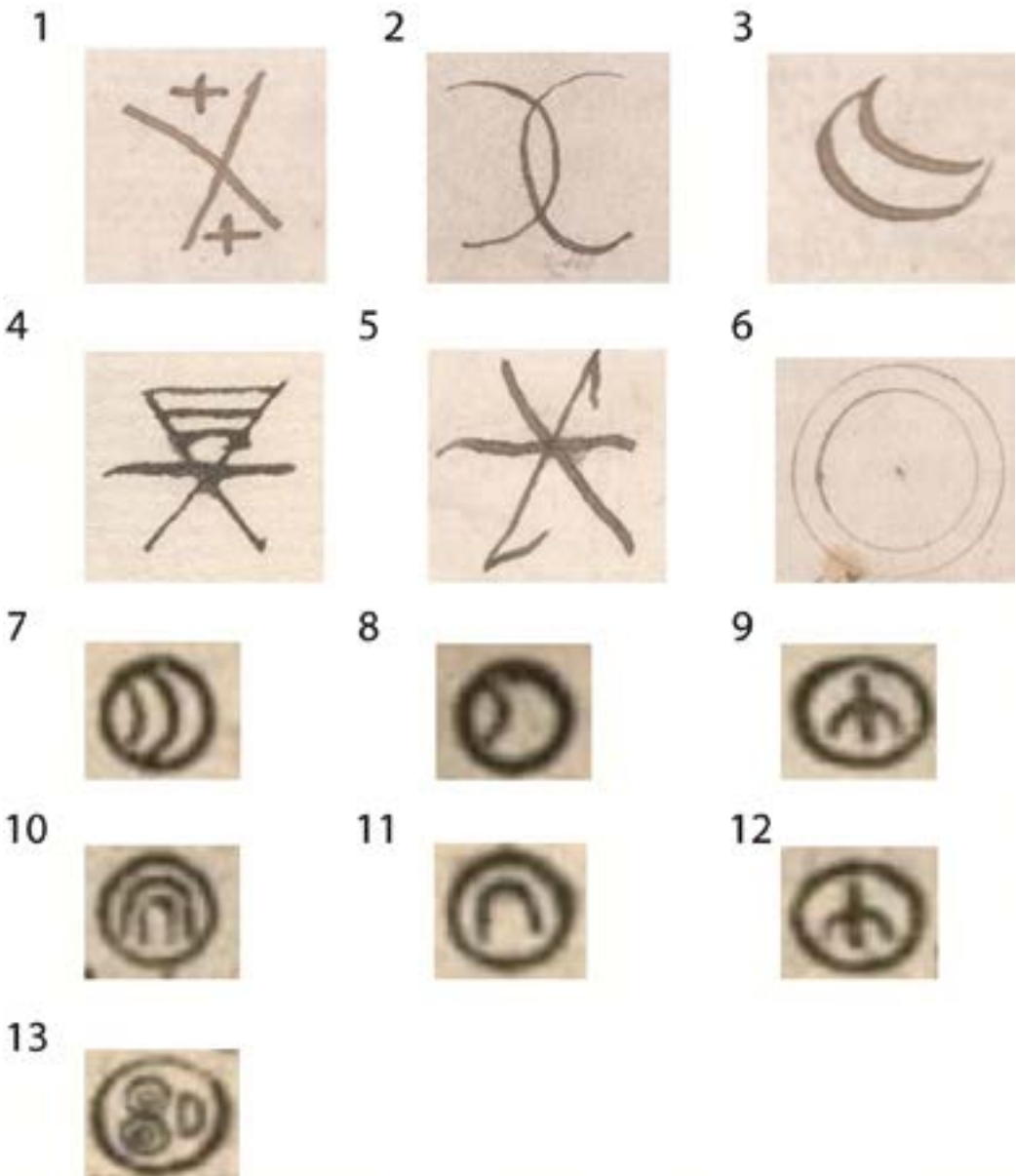


Figure 7.11: Examples of content gauge approval marks from written sources. 1. Mark of the kuitsieken herring (herring with underdeveloped or poorly developed roe); 2. Mark of the wammelosen herring (soft, limp herring, likely of poor quality or spoiled); 3. Mark of the wracken herring (of the lowest quality); 4. Mark of the brandpacker Andries Stevenssen in Veere in 1540; 5. Mark of the brandpacker Anthuenis Falquier in Veere in 1577; 6. Mark of the Rooner herring (to be exported to France and Flanders; 7. Mark of the maatjes herring; 8. Mark of the maatjes wrak herring; 9. Mark of the maatjes wrak-wrak herring; 10. Mark of the volle herring; 11. Mark of the volle wrak herring; 12. Mark of the volle wrak-wrak herring; 13. Mark of the brand Herring. Sources: 1. ZA, SV, No. 312/80, August 4, 156. ID1022; 2. ZA, SV, No. 312/80, August 4, 1568. ID1024; 3. ZA, SV, No. 312/80, August 4, 1568. ID1022; 4. ZA, SV No. 1898/1, 1540-1550. ID1222; 5. ZA, SV, No. 1898/1, 1540-1550. ID1299; 6. (ZA, SV, No. 312/80, August 4, 1568. ID1022; 7-12. Westerhovius, 1743, 354-355.

Method of application

No sources have been found that prescribe regulations for the method of applying content gauge approval marks. Given their function of indicating a successful gauging process, it was essential that these marks were clearly visible and durable and so the use of a timber scribe, branding iron, and strike iron is a likely method of application.

Mark location on cask

Various sources from different periods stipulate where the content gauge approval mark was to be applied. Both the bilge and the heads are mentioned as mark locations, suggesting a chronological shift in marking practices.

In the earliest ordinances, marks were to be applied on the bilge, with additional specifications stating that they should be placed between the belly hoop and the third hoop.³⁸⁴ However, beginning in the 18th century, placement on a head became mandatory.³⁸⁵ The marks for *volle* herring (Figure 7.11_7-13) are all positioned on the cask head. The large outer circles of the designs represent the outline of the cask heads.

7.7.3.2 Content gauge rejection marks

Inspectors applied the content gauge rejection mark to casks whose contents failed to meet the required standards during the gauging process. As discussed in section 7.7.3.1, written records refer to content gauge marks mainly in relation to herring. The classification system differentiated several levels of quality, with the lowest grade designated as *wrack*.³⁸⁶ In the case of herring, marks that indicate *wrack* are interpreted as content gauge rejection marks, whereas for other products, the meaning may differ.

Design

Various written sources describe or depict the design of the content gauge rejection mark, revealing variations over time. In Veere, the mark used in 1544 consisted of a double circle placed on the bottom of the cask.³⁸⁷ By 1663, Amsterdam had adopted a different design, featuring a double half-circle.³⁸⁸ By 1743, herring of the lowest quality, classified as *wrak-wrak*, consistently bore the same mark regardless of the catch period. The design was of a half-circle with a line transversing it (Figure 7.11_9, 12).

³⁸⁴ Beaujon, 1885, 48.

³⁸⁵ Westerhovius, 1743, 354-355.

³⁸⁶ Published in: Smient & Smient, 1663; Beaujon, 1885, 11; ZA, SV no. 312/88, August 4, 1568.

³⁸⁷ ZA, SV no. 312/88, August 4, 1544.

³⁸⁸ Published in: Smient & Smient, 1663, 471.

Method of application

No written sources have been found that prescribe the method of applying cask gauge rejection marks. Given their function of indicating a unsuccessful content gauging process, it was essential that these marks were clearly visible and durable and so the use of a timber scribe, branding iron, or strike iron are the likely methods of application.

Mark location on the cask

Similar to the placement of content gauge approval marks, written sources indicate that rejection marks were initially applied to the bilge and later to the head of the cask.

7.7.4 Identification marks

Casks were marked for identification purposes during the second phase of their lifecycle, as transport containers. In some cases, it may have been necessary to label the product in the casks. For cask marks with this function, type 4a has been added to the typology. For instance, in 1692 ships of the Verenigde Oost-Indische Compagnie (VOC) encountered problems because casks containing tar and vinegar closely resembled those used for storing food and drink.³⁸⁹ To prevent confusion, products were required to be clearly labeled in ink.³⁹⁰

Cask marks also served to identify the persons or companies associated with the casks and their contents. These cask marks could indicate ownership of the casks but could also indicate commercial agents or entities who were transporting or trading the products. Cask marks could also be associated with and bear the logo of companies such as the VOC or a brewery.³⁹¹ Hence, for personal identification marks, type 4b has been added to the typology, while type 4c pertains to corporate identification marks.

A common element of the three subtypes of identification marks (4a, b, and c) is that they were all applied to the cask as a transport container and were applied in the process of filling, trading, or transport. These identification marks indicated to transporters, traders, and owners what the contents of the cask were as well as the person or corporation associated with it, which removed the need to open the cask. Identification marks were applied by owners, shippers, transporters or traders and thus are distinguished from cask or content gauge marks, which were applied by urban inspectors. While gauge marks are typically found in sources of an institutional nature (e.g., city regulations), identification marks are more varied and

³⁸⁹ NA, VOC, No. 192-194, March 26, 1692.

³⁹⁰ Lekkerkerk, 1992, 58.

³⁹¹ Gaastra, 1991; Lekkerkerk, 1992, 60.

can be found in the archives of trade organizations, bills of lading, and personal correspondence.

7.7.4.1 Product identification marks

The product identification mark was applied to casks to describe the product it was carrying, and was placed on the casks by the producers of the merchandise. As previously mentioned, the contexts in which this type of mark is referenced in written sources vary. To better understand the function and features of this type of cask mark a few examples from written sources are discussed below.

The product identification mark was particularly useful when a casks' contents were not easily distinguishable from the contents of other casks because the external characteristics of the casks were similar. An example is the similar looking casks on VOC ships that contained tar and vinegar, or food and drink, mentioned above.³⁹²

Product identification marks indicated not only the type of product but also its origin. The archives of the Sociëteit van Suriname list marks on casks filled with coffee beans and information on the plantations from which the coffee beans originated (Chapter 8).³⁹³ The casks were transported on the frigate *'t Hart*, which sank in 1751 near the Dutch island of Texel. The coffee beans had been grown on various plantations owned by Jan Pietersz Visser.³⁹⁴ The casks were marked not only with the owner's personal identification mark, "IPV," but also with a mark identifying the contents. The mark "SD" was used for Sardam plantation (Figure 7.12_1), "OB" referred to the Ornamibo plantation, and "RR" to the Rorac plantation (Figure 7.12_2). A fourth plantation, Claverblad, was identified by a *klaverblad* (three-leafed clover) symbol as its cask mark (Figure 7.12_3).

Design

The product identification marks mentioned in written sources indicate a wide variation in design. Since the people who applied the cask marks typically had the freedom to determine the design themselves, such variation was bound to occur. The examples below show designs ranging from letter combinations (Figure 7.12_1, 2) to geometric figures (Figure 7.12_3).

³⁹² Lekkerkerk, 1992, 58.

³⁹³ NA, SvS, No. 280/316 (OBP), October 24, 1747.

³⁹⁴ Tran et al., 2025.

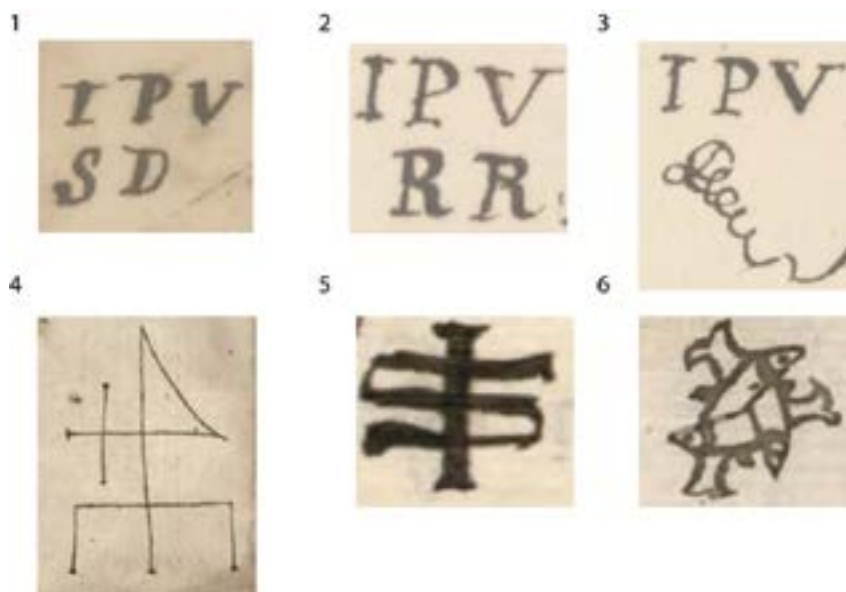


Figure 7.12: Examples of product and personal identification marks from written sources. 1. Mark of Jan Pietersz Visser and the plantation Sardam; 2. Mark of Jan Pietersz Visser and the plantation Rorac; 3. Mark of Jan Pietersz Visser and the plantation Claverblad; 4. Mark associated with Dietrich Hoerner and Heinrich Schelt; 5. Mark associated with William Gresham and Adrian Johnson; 6. Mark associated with Rychard Rede and William Gresham and his wife. Sources: 1-3. NA, SvS, No. 280/316 (OBP), October 24, 1747; 4. Jenks & Wubs-Mrozewicz, 2022, 116; 5. Jenks & Wubs-Mrozewicz, 2022, 143; 6. Jenks & Wubs-Mrozewicz, 2022, 106-107.

Method of application

The written sources do not contain information on how the product identification mark was to be applied on casks. But cask marks of this type found in archaeological contexts can provide clarification (Section 7.8.4).

Mark location on the cask

Neither do the written sources specify the location on the cask where this type of cask mark was to be applied, examples from archaeological contexts can provide clarification (Section 7.8.4).

7.7.4.2 Personal identification marks

Personal identification marks, in contrast to product and corporate identification marks, have received more attention in the investigation of written sources.³⁹⁵ This type of mark is referred to as a merchants' mark or a household mark, but as Jenks and Mrozewicz point out, they were not used exclusively by individual merchants or households.³⁹⁶

³⁹⁵ Girling, 1964; Bermond-Picot, 2020; Jenks & Wubs-Mrozewicz, 2022.

³⁹⁶ Jenks & Wubs-Mrozewicz, 2022, 61-62.

This type of mark was used in the same way as signatures functioned in the Late Middle Ages and Early Modern period.³⁹⁷ The marks, thus, are found in a wide range of contexts, for example, on gravestones and house facades, and in personal letters and legal documents.³⁹⁸

Written sources also mention personal identification marks on casks, identifying the traders involved and the merchandise they contained. In many cases, the mark of the owner of the goods was also applied. This was particularly important when the parties in the trade agreement were not involved in the shipping of the casks. To formalize trade agreements and allow the carrier or commercial agent to handle the transport and the transaction, a *cognossement* (bill of lading) could be used. In Figure 7.13 shows an example of a *cognossement* describing the trading of several marked casks in which the captain of the ship was responsible for completing the transaction between seller and buyer. The mark in the margin is a monogram of the letters "I" and "B," referring to Isaq de Brito, the selling party, that is, the owner of the goods who was selling them.



Figure 7.13: An example of a *cognossement* (bill of lading), indicating that Isaq de Brito had oxheads (specific type of casks) with brandy and sugar, among other things, transported to Vlissingen in 1672 on the ship *Bycoref* with Captain Jacob Suteligh from Flesingen. The casks were intended for Francisco de Medina, who, based on this bill of lading and after transferring the agreed upon payment, would be able to claim the casks by the mark displayed in the margin (TNA, HCA, No. 223, August 25, 1672; Database Zee(uw)post, n.d., <https://digitaal.dezb.nl/zeeuwpost/book/023e137d-56c9-5a3b-d083-6f5a58246e15/1>).

As mentioned earlier, personal identification marks did not function only as an identification of the owner or an affiliated merchant. They could also refer to the claimants of the goods (i.e., the buyer) or an intermediary commercial agent.³⁹⁹

³⁹⁷ Jenks & Wubs-Mrozewicz, 2022, 65.

³⁹⁸ Girling, 1964, 17; Zeven, 2010, 4.

³⁹⁹ Jenks & Wubs-Mrozewicz, 2022, 61.

Additionally, sources show that personal identification marks referred to people other than the owner. For example, Jan Pietersz Visser, who purchased the Surinamese plantation Sardam in 1745 (Figure 7.12_1-3), used the mark “FLW,” the personal mark of the former plantation owner Frans Lorens Wriedt until 1747, at which he began using “IPV” as a cask mark.⁴⁰⁰

The main function of the mark, however, remained the same. It allowed those involved in the shipping and trading of the cask to easily recognize it. That this type of mark fulfilled its function is shown in the research of Jenks and Mrozewicz who analyzed communications related to merchandise transported in 1533-1534. The unmarked casks were described in more detail than the marked ones, which indicates that cask marks functioned effectively as a shorthand for identification.⁴⁰¹

Design

The product identification marks found in written sources exhibit significant diversity in their design. This variation exists because the people who applied the marks were free to design the marks themselves. Designs ranged from a combination of strokes (Figure 7.12_4), to simple combinations of letters (Figure 7.12_5), to more complex representation (Figure 7.12_6).

Method of application

The written sources do not stipulate how the product identification mark was to be applied to casks. However, many personal identification marks remained consistent because they were linked to a specific individual. This consistency made it worthwhile to invest in a branding iron or strike iron for marking casks. Alternatively, marks could also be applied using a timber scribe or ink. Examples of this type of cask mark found in archaeological contexts help clarify these application methods (Section 7.8.4).

Mark location on the cask

The written sources do not indicate a specific location where on the cask this type of mark was to be applied, so the preferred location of personal identification marks on casks remains unknown. Examples from archaeological contexts can provide valuable insights into these practices, helping to determine common patterns in mark placement and their possible significance (Section 7.8.4).

7.7.4.3 Corporate identification marks

Corporate identification marks were applied by a specific corporate entity and were used to identify the owner of a cask and its contents by that company, or to

⁴⁰⁰ Tran et al., 2025.

⁴⁰¹ Jenks & Wubs-Mrozewicz, 2022.

indicate that the contents of the cask were produced by a specific corporate entity. An example of a corporate identification mark was found on the VOC ship *De Amsterdam*, which sank near Hastings, England, in 1749, and which bore a VOC mark of ownership.⁴⁰²

Corporate identification marks also functioned as indicators of origin and quality.⁴⁰³ This is particularly relevant for beer casks, for which examples of marks are known. No specific regulations have been found in written sources, but paintings illustrate this practice. Several Dutch paintings from the research period that probably depict breweries, show beer casks with marks visible on the heads of the casks (Figure 7.14). These corporate identification marks made it easy to identify the origin of the beer when, for example, it was tapped and served in a tavern.

Design

The examples of corporate identification marks discovered show company logos. In the case of the VOC, this involved a combination of letters, but for breweries, logos usually consisted of complex representations. Examples of this include a lion (Figure 7.14_1), a goat (Figure 7.14_2), and a crowned horseshoe (Figure 7.14_3).



Figure 7.14: Examples of corporate identification marks from iconographical sources. Sources: 1. *Peasants inn* [Oil on canvas, no. S 527], by Frans van Mieris (de Oude), c. 1655. Museum de Lakenhal, Leiden, The Netherlands; 2. *The Old drinker* [Oil on canvas, inv. no. SK-A-250], by Gabriël Metsu, 1661–1663. Rijksmuseum, Amsterdam, The Netherlands; 3. *Beer carrier* [Etching, no. RP-P-1896-A-19368-1631], by Jan Luyken, 1711. Rijksmuseum, Amsterdam, The Netherlands.

Method of application

The examples of corporate identification marks in artistic contexts consist of marks made with ink or paint. Given the frequency with which this type of cask mark would have been applied, the use of a branding iron or strike iron is also considered a possibility, although no references to this method have been found in written sources or paintings.

⁴⁰² Lekkerkerk, 1992, 60.

⁴⁰³ Jenks & Wubs-Mrozewicz, 2022, 65.

Mark location on the cask

Notably, corporate identification marks on beer casks in paintings are exclusively depicted on the heads of casks. This is likely related to the horizontal position of the beer casks, such as those found in taverns, from which beer was tapped (Figure 7.14_1, 2). The marks applied to the heads were therefore clearly visible to those in the tavern. Other examples, such as the VOC mark found on the ship *De Amsterdam*, were applied centrally on the bilge. In summary, corporate identification marks were applied on the bilge of casks, though it can be argued they were also applied on the heads.

7.7.5 Count marks

Count marks were used to indicate the quantity of goods contained in the casks that were being shipped. The application of these marks was likely carried out by various parties involved in the trading process, whether merchants, consumers, or people responsible for facilitating trade, such as toll collectors. These marks were a practical way of quantifying goods for those who handled them or managed their transport.

In written sources there are no records or regulations describing the use of count marks on casks. This absence may be due to the fact that count marks were not applied in an institutional framework or formalized context in which they functioned. Unlike other types of marks that were linked to specific gauging jurisdictions, count marks were often used informally and on a day-to-day basis by various parties. Tally systems and other forms of quantification were widely used in trade and commerce, and the practice of marking casks with numerical quantities was likely so commonplace and intuitive that it did not require further explanation or institutionalization.

This type of mark, however, has been found on casks in archaeological contexts and has already been identified as a separate type of cask mark,⁴⁰⁴ warranting its inclusion in the typology. Since research on written sources does not provide information about count marks, the study of count marks in architectural-historical research has provided insight into their characteristics (see further below).⁴⁰⁵

Design

The design of the count mark is distinctive. It functioned as a tally system that was traditionally employed to represent numbers, particularly in contexts requiring quantification. These marks are of significant interest in architectural-historical research, as they are commonly found on wooden roof structures and stone materials used in buildings. Janse has carefully analyzed the tally system and

⁴⁰⁴ Schoute, 2017; Hofman, 2020.

⁴⁰⁵ Janse, 1990; Zeven, 2010.

traced its use back to the 13th century.⁴⁰⁶ This system represented each number with a unique symbol or combination of symbols. For example, the number 5 was typically represented by “^” and the number 10 by “X.” The exact numerical value was denoted by varying numbers of crossbars or notches (Figure 7.15).

In time, especially after the 13th century, the tally system became more refined. Count marks appeared in several forms, including Arabic numerals, Roman numerals, and tally marks. There were also regional and chronological variations in the design of count marks. The design of the count marks is, however, always related to numbers, whether in the Arabic system, the Roman system, or the tally system.



Figure 7.15: Examples of the tally system used in the Netherlands during the Late Middle Ages (based on Janse, 1990).

Method of application

The examples of count marks from archaeological contexts were applied using a timber scribe or knife.⁴⁰⁷ Given the functional nature of count marks and their practical role in transactions, tools such as a scribe or knife would have been the expected instruments for applying them. Furthermore, examples from architectural-historical research reveal applications made with a timber scribe or knife.⁴⁰⁸

Mark location on the cask

The absence of regulations regarding the placement of count marks allowed for flexibility in their application, and so they can be found on various locations on the cask. This type of cask mark can thus be expected to appear on either the bilge or on the heads of casks.

7.7.6 Content quantification marks

Content quantification marks were applied to casks after they arrived at their destination, where the contents were quantified by officials appointed especially for this task. Quantification was necessary because merchants were required to pay market tolls or excise duties to the urban authorities or to those who had leased

⁴⁰⁶ Janse, 1989, 1990.

⁴⁰⁷ Schoute, 2017; Hofman, 2020.

⁴⁰⁸ Janse, 1990.

the excise rights from them, and these tolls were based on quantity.⁴⁰⁹ The content quantification marks indicated officially measured contents from which was used to calculate the amount of excise duties required, based on applicable rates.

The best-known example of the content quantification mark is the *wijnroeiersmerk* (wine gaugers' mark), which has received considerable scholarly attention. A substantial amount of written source material makes reference to this type of cask mark. This is not surprising given its function and significance, and the fact that it was used in a wide range of institutional contexts of wine quantification. In cities with a staple rights on wine, for example, Dordrecht (granted in 1299)⁴¹⁰ and Utrecht (granted in 1375),⁴¹¹ quantification generated significant revenue for the city and was therefore closely supervised. For instance, in late medieval Utrecht, revenue from wine excise duties was the largest source of income after beer excise duties.⁴¹²

Excise duty on beer was the largest source of urban revenue for many cities in Holland and in the Sticht region, such as Amersfoort and Utrecht.⁴¹³ The amount of excise duty on beer was based on quantity and so establishing the volume of beer being sold or purchased was important. However, the quantities of incoming beer was determined by the number of casks, not by actual content, as with wine.⁴¹⁴ This difference is likely due to the fact that beer, unlike wine, was pressurized inside the cask because of the fermentation process and so opening the cask to measure its contents would have caused the beer to spill. This explains why no content quantification marks have been found on beer casks.

Design

The only visual evidence of content quantification marks is that of the wine gaugers' mark. The following discussion of this type of cask mark will, therefore, focus exclusively on wine gaugers' marks. The design of the wine gaugers' mark followed a consistent pattern, which makes it easy to distinguish from other types of marks, despite the variation of the wine gaugers' marks design of different cities.

The design consists of two elements. First, quantity is represented by a series of horizontal, vertical, or diagonal strokes (Figure 7.16). Of course, wine gaugers' marks differ from one another because the contents varied from cask to cask. The second element is a cross or multiple crosses placed next to the quantity symbol. A cross stroke was the gaugers' way of ensuring additional marks would not be added after the wine gauger had marked the cask. This was intended to prevent the fraudulent inflation of the quantity of wine in the cask.⁴¹⁵

409 Beukers, 2007, 24; Weststrate, 2007, 69; Van Gangelen & Potze, 2017, 129.

410 Van Gangelen & Potze, 2017, 132.

411 Van Gangelen & Potze, 2017, 133.

412 Beukers, 2007, 24.

413 Alberts, 2017, 356–361; Beukers, 2007, 24.

414 Yntema, 1992, 950; Alberts, 2017, 36.

415 Van Gangelen & Potze, 2017, 140.

The elaborate designs of wine gaugers' marks mean they are relatively large compared to other marks. They typically extend across at least two, and often three, staves of a cask.

As mentioned above, designs varied from city to city. The wine gaugers' mark was used in cities with staple rights on wine in Holland and the Stichtse region, but this right was also held by cities in neighboring regions, such as Cologne, Bruges, and Antwerp. In these latter cities, different measurement units were used to quantify the volume of wine, and this variation affected the design of the wine gaugers' mark (Figure 7.16). For example, in Cologne, measured volume was represented by a series of horizontal strokes, each stroke representing one *ohm* (a standard volume unit). Smaller vertical or diagonal strokes were used to denote the *viertel* (a smaller volume unit of measurement). The largest unit, the *fuder*, which was equivalent to a large cask, was represented by a triangle (Figure 7.16_1). These markings provided clear indications of the amount of wine in a cask, and the specific design of each mark served to identify the city and its system of measurement.

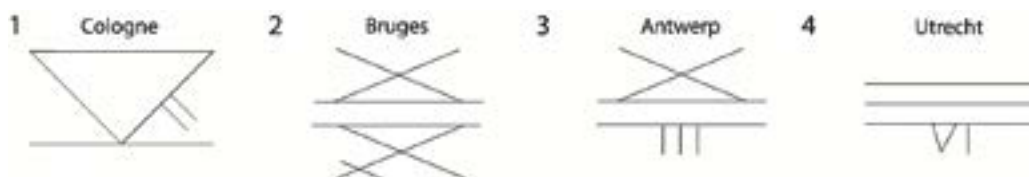


Figure 7.16: Examples of wine gauge marks from various Northwest European cities (based on Van Gangelen & Potze, 2017).

Method of application

Applying the wine gaugers' mark was known as *ritsingen*, which refers to the use of a *ritsmes* (timber scribe). References to regulations for how this type of cask mark was to be applied explicitly state that only the timber scribe was to be used as application tool.⁴¹⁶ Given the function of this type of cask mark, it needed to be visible and durable. The timber scribe was particularly useful in that it afforded flexibility in adapting the design to the cask contents, which varied from cask to cask.

Mark location on the cask

Written sources that refer to the location of the wine gaugers' mark indicate that it was placed on the bilge of the cask, next to the bung hole.⁴¹⁷

7.8 The typology applied to cask marks from archaeological contexts

To assess the suitability of the typology for cask marks, it was projected on cask marks from Dutch archaeological contexts. For this purpose, a dataset was created containing 1,021 cask marks from archaeological Dutch contexts, of which 902 (88%) could be assigned to a specific type (Table 7.3).

⁴¹⁶ Beukers, 2007, 36; Weststrate, 2007, 694; Van Gangelen & Potze, 2017, 13.

⁴¹⁷ Van Gangelen & Potze, 2017, 134–137.

Each mark was identified as specifically as possible in the typology. If there was a further division into subtypes within a main type, the marks were assigned to the corresponding subtype. However, for 33 identification marks, there was insufficient data available to make a reliable assignment, so they were only labeled as the main type “4. Identification mark.”

Table 7.3: Number of cask marks, by type.

Cask mark type	Number of cask marks	Percentage of cask marks
1. Production mark	0	0%
1a. Construction mark	77	7.5%
1b. Coopers’ mark	27	2.6%
2. Cask gauge mark	0	0%
2a. Cask gauge approval mark	30	2.9%
2b. Cask gauge rejection mark	15	1.5%
3. Content gauge mark	0	0%
3a. Content gauge approval mark	81	7.9%
3b. Content gauge rejection mark	8	0.8%
4. Identification mark	33	3.2%
4a. Product identification mark	16	1.6%
4b. Personal identification mark	437	42.8%
4c. Corporate identification mark	3	0.3%
5. Count mark	125	12.4%
6. Content quantification mark	50	4.9%
Unknown	119	11.6%
Total	1021	100%

The following sections discuss the features of each type, focusing on the most common and notable designs, the type of context in which the mark was found, the method of application, and the marks’ location on the cask.

7.8.1 Production marks

The production marks are subdivided into construction marks and coopers’ marks. Both marks were applied during the first phase of the lifecycle of a cask by the cooper who crafted them. Figure 7.17 shows the most notable examples of production marks; Table 7.4 presents features of the cask marks.



Figure 7.17: Examples of production marks: 1. Construction mark for measuring headboards; 2. Construction mark for pairing headboards; 3. Construction marks indicating the sequence of staves; 4. Coopers' mark on interior head; 5. Coopers' mark on interior head; 6. Coopers' mark on exterior head. Sources: 1. Vos, 2012, 184. ID186; 2. Verminnen, n.d. ID428; 3. Hemert & Huijsmans, 2022, 81; 4. Manders, 1996, 61. ID955; 5. Tump, 2014, 29. ID467; 6. Gerritsen, 2013, 207. ID477.

Table 7.4: Number of production marks (construction marks and coopers' marks) by mark feature.

Context type	Number of construction marks	Number of coopers' marks
Maritime	68	13
Urban	7	13
Rural	2	1
Total	77	27
Application tool		
Timber scribe	7	20
Knife	38	2
Timber scribe or knife	7	1
Compass	25	0
Branding iron	0	3
Unknown	0	1
Total	77	27
Location on task		
Head (exterior)	47	6
Head (interior)	27	21
Bilge (centre)	3	0
Total	77	27

7.8.1.1 Construction marks

The construction marks in the dataset of cask marks from archaeological contexts were primarily identified by the method of application, the location of the mark on the cask, and, most importantly, by their design. The design and its associated function have been described by present-day coopers, as detailed in section 7.7.1. Based on these features, a total of 77 construction marks were identified in the Database WOODAN Cask Marks. The construction marks from maritime contexts represent the vast majority of this type of cask mark—68 out of the 77 examples (Table 7.4).

In the dataset, 25 examples of cask marks of concentric lines were found (Figure 7.17_1), which were, according to present-day coopers used to indicate the correct orientation of the head in the cask (Section 7.7.1). The examples from archaeological contexts provided the opportunity to examine these cask marks in detail, allowing for the identification of an additional function for this type of mark. Notably, the diameter of the concentric shape of the cask mark is almost identical to that of the head on which it is placed, and the concentric lines consistently intersect exactly above and below the centre of the heads. These two features suggest that this concentrically shaped cask mark was applied during the measurement of the heads.

After the headboards were sawn to length, they needed to be assembled correctly, which was facilitated by V-shaped marks on the heads (n=7; Figure 7.17_2). In the example shown, it is notable that the V-shaped mark is partially covered by a clamp, a structural element used to reinforce the head of the cask. Because of the placement of the clamp, the mark would have been largely invisible during the casks' use as a transport container, confirming the interpretation of this cask mark as a construction mark. The assembly of the headboards required the use of dowels, whose positions could also be marked on the headboards, typically represented by a double straight line (n=22).

In some cases, construction marks were also intended to ensure that casks could be correctly reassembled after initial use and temporary disassembly. An example of such a series of cask marks was found on a cask repurposed as a 17th-century water well shaft in Mierlo (n=1; Figure 7.17_3).⁴¹⁸ Each stave was marked with a numerical cask mark, allowing the staves to be reassembled in the correct order. Given the often-temporary nature of construction marks, which were important during the assembly of casks, it is not surprising that most of these marks were shallow, indicating that they were inscribed with a compass (n=25) or knife (n=38; Table 7.4). This method accounts for 82% of the documented cask marks. In contrast, construction marks intended for reassembly were inscribed more deeply using a timber scribe.

⁴¹⁸ Hemert & Huijsmans, 2022, 81.

The vast majority of construction marks, 96%, were found on the heads of the casks (n=74), with 27 (35%) located on the interior of the heads (Table 7.4). The relatively low number of construction marks on the bilge of casks may be linked to the finishing process at the end of the construction phase when both the interior and exterior surfaces of the casks were smoothed to create a seamless finish, which likely removed any shallow construction marks.

7.8.1.2 Coopers' marks

In the Database WOODAN Cask Marks, a total of 27 coopers' marks have been identified based on the features listed in the typology (Table 7.4). The design of this type of cask mark shows considerable variation and exhibits similarities in design with identification marks. When distinguishing between these two types of cask marks, the location of the coopers' mark on the interior of the heads was of crucial importance.

The size of coopers' marks varied; some are quite small, appearing on only one head piece, while others are large, spanning several pieces. The design typically consists of a series of straight lines intersecting at right angles (Figure 7.17_4-6), sometimes combined with circles. Some coopers' marks also include letters (Figure 7.17_5) or, in some cases, Christian symbols such as the Chi-Rho.

Coopers' marks display distinct features in terms of both their method of application and location on the cask. The majority of the marks (n=20, 74%) were applied with a timber scribe (Table 7.4). This typical coopers' tool was readily available to coopers and was thus used for most of the marks. The location of the marks also follows a clear pattern. All of the coopers' marks were on the heads, either on the interior (n=21) or exterior (n=6; Table 7.4). The higher frequency of marks on the interior is understandable, as newly made casks would not yet be filled with merchandise, leaving the exterior free for other marks.

7.8.2 Cask gauge marks

The cask gauge marks are subdivided into cask gauge approval and rejection marks. Both types were applied to casks by urban inspectors as the final step of the production phase, the first phase of the casks' lifespan. Figure 7.18 shows notable examples of cask gauge marks from archaeological contexts; Table 7.5 presents relevant features of casks.



Figure 7.18: Examples of cask gauge marks: 1. Cask gauge approval mark with coat of arms of the city of Amsterdam and the year 1651; 2. Cask gauge approval mark with a simplified version of the coat of arms of Leiden with a "W"; 3. Cask gauge approval mark with the year 1755; 4. Cask gauge approval mark consisting of the numbers 6 and 4; 5. Cask gauge rejection mark consisting of one circle. Sources: 1. Database DANS Data Station Archaeology, n.d., <https://archaeology.datastations.nl/dataset.xhtml?persistentId=doi:10.17026/DANS-XQ9-MGH2>, licensed by CC BY 4.0; 2. Verduin, 2019, 255. ID417; 3. Unpublished. ID948; 4. Van der Laan, 2023, 54. ID848; 5. Oosterbaan & Griffioen, 2015, 571. ID573.

Table 7.5: Number of cask gauge marks (approval and rejection marks) by mark feature.

Context type	Number of cask gauge approval marks	Number of cask gauge rejection marks
Maritime	4	1
Urban	19	14
Rural	7	0
Total	30	15
Application tool		
Timber scribe	18	8
Timber scribe or knife	4	1
Compass	2	6
Branding iron	4	0
Strike iron	2	0
Total	30	15

Context type	Number of cask gauge approval marks	Number of cask gauge rejection marks
Location on task		
Head (exterior)	4	0
Bilge (centre)	19	11
Bilge (bottom)	1	3
Bilge (centre near hole)	3	1
Unknown	3	0
Total	30	15

7.8.2.1 Cask gauge approval marks

In the Database WOODAN Cask Marks, 30 cask gauge approval marks were identified, primarily based on the design of the cask mark, which ranges from the coat of arms of a city (Figure 7.18_1) to a series of numbers indicating the year the cask was gauged (Figure 7.18_1, 4). In some cases, the cask gauge approval process was concluded with multiple marks. In addition to a coat of arms or a date, the inspectors' mark was also be applied occasionally, as seen in the "W" next to the coat of arms of Leiden in Figure 7.18_2. The majority of this type of cask mark was applied with a timber scribe (n=18). However, the use of a branding or strike iron was also an option. Most of the cask gauge approval marks are found at the centre of the bilge (n=19; Table 7.5).

7.8.2.2 Cask gauge rejection marks

A total of 15 cask gauge rejection marks were identified in the dataset, mostly based on their design (Table 7.5). All but one of these examples originated from an urban archaeological context. The casks on which these marks were found were likely not repaired by a cooper after being rejected, but they were not discarded. They could still be repurposed as the shaft of a barrel well, which served as a cesspit or water well.⁴¹⁹

The design of the cask gauge rejection marks found in archaeological contexts is uniform. All are circular with a central point, but in some cases, multiple circles appear together (Figure 7.18_5). Thus, the design of the cask gauge rejection marks presented in the typology (Section 7.7.2) is also present in archaeological contexts.

Given the circular design, it is not surprising that a significant number of the cask gauge rejection marks were made using a compass (n=6). The cask gauge rejection marks in the dataset were applied exclusively to the bilge, with the majority found at the centre of the bilge (n=11; Table 7.5).

⁴¹⁹ Van Oosten, 2015, 84.

7.8.3 Content gauge marks

The content gauge marks are also subdivided into approval and rejection marks. Both types of cask marks were applied by urban inspectors after they had inspected the merchandise in the casks. The application of a content gauge mark indicated the completion of the gauging. Figure 7.19 shows the most notable examples of cask gauge marks from archaeological contexts, while Table 7.6 presents relevant features of cask marks.



Figure 7.19: Examples of content gauge marks: 1. Content gauge approval mark consisting of three circles; 2. Content gauge approval mark consisting of two circles and two “B”s; 3. Content gauge approval mark consisting of a cross; 4. Content gauge approval mark consisting of two circles over a hole; 5. Content gauge rejection mark consisting of two half circles. Sources: 1. Duijn & Schrickx, 2011, 40. ID538; 2. Duijn & Schrickx, 2011, 43. ID542; 3. Oosterbaan & Griffioen, 2015, 570. ID591; 4. Duijn & Schrickx, 2016, 478. ID518; 5. Van Haaster et al., 2020, 23. ID345.

Table 7.6: Number of content gauge marks (approval and rejection marks) by mark feature.

Context type	Number of content gauge approval marks	Number of content gauge rejection marks
Maritime	7	2
Urban	60	4
Rural	14	2
Total	81	8
Application tool		
Timber scribe	43	3
Timber scribe or knife	12	2
Compass	20	3
Branding iron	3	0
Strike iron	3	0
Total	81	8
Location on task		
Head (exterior)	11	1
Bilge (centre)	42	4
Bilge (bottom)	3	3
Bilge (centre near hole)	25	0
Total	81	8

7.8.3.1 Content gauge approval marks

The Database WOODAN Cask Marks contains 81 content gauge approval marks, primarily identified by their distinctive design. As mentioned in section 7.7.3, content gauge approval marks were extensively described in written sources in relation to herring casks. Their design was typically simple and related to a quality designation or the specific time of year during which the herring was caught.

The prescribed design of this type of mark is also found on casks from archaeological contexts. These marks, for example, consist of a combination of circles, which were likely applied by an inspector to the herring cask at three times to confirm that the filling process had been done correctly—filled, topped off, and the herring salted (Figure 7.19_1, 4).

The design of cask marks consisting of circles also featured multiple, concentric circles (Figure 7.19_2). This design is identical to the prescribed form of the mark for *Rooner* herring, which was exported to France or Flanders (Figure 7.11_6). In addition to this circular mark, the letter “B” was also applied twice, possibly indicating the *Bartholomeus brand*. This herring was caught after August 24, in the

middle of the herring season, when the fish carried fully developed roe or milt. The "X" found on various herring casks from archaeological contexts is likely to be interpreted as the *Kruys brand* (Figure 7.19_3). This herring was caught after September 14, at the end of the herring season.

Written sources from the early part of the research period regarding the location of content gauge approval marks on herring casks stipulate that they were to be placed on the bilge of the casks. In the 18th century, placement on heads became mandatory (Section 7.7.3). The examples of this type of cask mark from the dataset show that the majority were found at the centre of the bilge (n=42; Table 7.6) or at the centre of the bilge near the bunghole (n=25), while only 11 were found on heads. No clear chronological pattern was observed in the placement of content gauge approval marks, suggesting that their application was more flexible than the prescribed regulations suggest.

No regulations regarding the method of applying content gauge approval marks have been found in written sources. However, examples from archaeological contexts provide an opportunity to provide this information. These examples indicate that the majority of marks were applied with a timber scribe (n=43; Table 7.6) or a compass (n=20). Given the various designs (Figure 7.11), a branding or strike iron would have been an obvious tool to use, yet these methods of application were observed in only six out of 81 cases. Apparently a timber scribe was precise enough to accurately apply the design to the casks. Additionally, the use of a compass for content gauge approval marks appears practical, considering the many circular elements in the prescribed designs of this type of cask mark.

7.8.3.2 Content gauge rejection marks

Only eight examples of content gauge rejection marks have been identified in the Database WOODAN Cask Marks (Table 7.6). All were identified based on their circular shape, which aligns with descriptions of this type of cask mark in written sources (Section 7.7.3). One example, consisting of two half circles (Figure 7.19_5), perfectly matches the prescribed design for this type of cask mark on herring casks, as stipulated in Amsterdam in 1663.

The distribution of content gauge rejection marks in terms of their location on the cask shows a pattern closely resembling that of content gauge approval marks. The majority were found at the centre of the bilge (n=4) or at the centre of the bilge near the bunghole (n=3). Only one example of this type of cask mark was applied to a head. The content gauge rejection marks were exclusively applied using either a compass or a timber scribe (or knife) (Table 7.6).

7.8.4 Identification marks

Identification marks are subdivided into product, personal, and corporate identification marks. These types of cask marks were applied by producers of the merchandise or merchants. The institutional context in which identification marks were applied varied, resulting in a range of features for this type of cask mark, which archaeological examples help clarify. Figure 7.20 presents notable examples of identification marks, while Table 7.7 displays the numbers per subtype and lists their features. It also shows that 33 cask marks could only be identified as the main type identification marks, a more specific assignment by subtype was not possible.

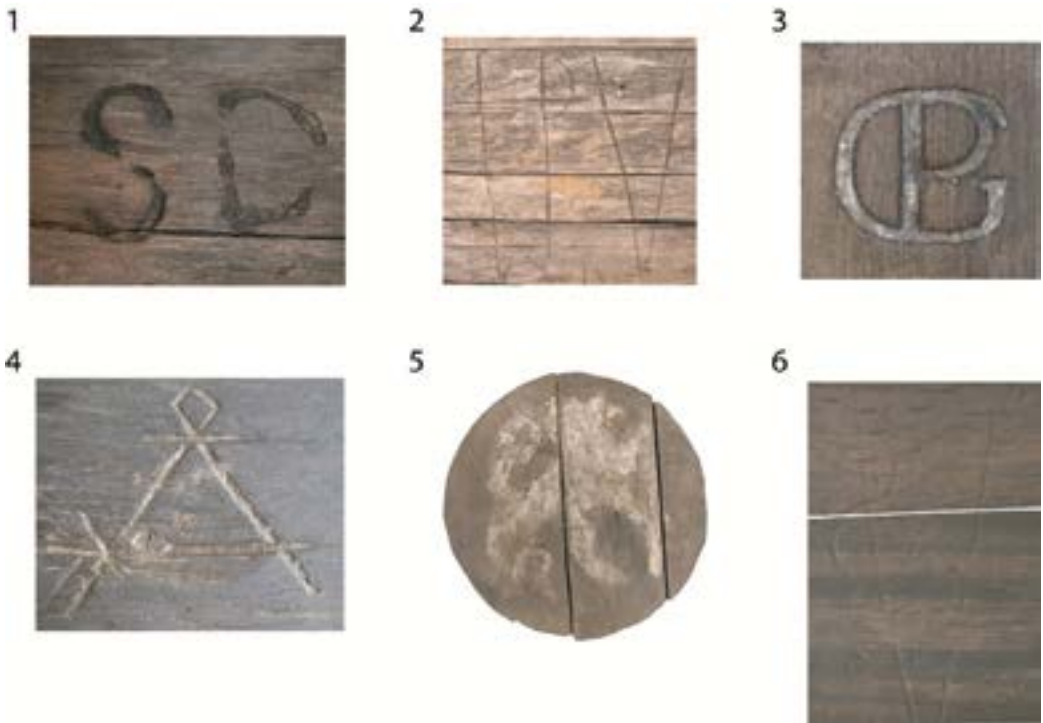


Figure 7.20: Examples of identification marks: 1. Product identification mark "SD"; 2. Personal identification mark "IPV"; 3. Personal identification mark "GP"; 4. Personal identification mark; 5. Corporate identification mark of a lion; Corporate identification mark "VOC". Sources: 1. Vos, 2012, 184. ID010; 2. Tran et al., in 2025. ID216; 3. Duijn & Schrickx, 2011, 35. ID530; 4. Verduin, 2019, 245. ID404; 5. Van Veen, 2012, 186. ID361; 6. Oosterbaan & Griffioen, 2015, 567. ID581.

Table 7.7: Number of identification marks (product, personal and corporate identification marks and identification marks unassigned to a subtype) by mark characteristic.

Context type	Identification marks	Product identification marks	Personal identification marks	Corporate identification marks
Maritime	18	16	158	0
Urban	14	0	248	3
Rural	1	0	27	0
Unknown	0	0	4	0
Total	33	16	437	3
Application tool				
Timber scribe	7	8	350	1
Knife	0	0	6	0
Timber scribe or knife	0	0	30	0
Compass	1	0	3	0
Branding iron	18	5	37	0
Strike iron	3	0	0	0
Brush	4	3	6	2
Unknown	0	0	5	0
Total	33	16	437	3
Location on cask				
Head (exterior)	12	9	140	2
Head (interior)	0	0	1	0
Bilge (centre)	17	3	211	1
Bilge (bottom)	1	4	48	0
Bilge (centre near hole)	2	0	21	0
Unknown	1	0	16	0
Total	33	16	437	3

7.8.4.1 Product identification marks

The 16 product identification marks in the Database WOODAN Cask Marks all originate from a single shipwreck, the *Burgzand Noord 4*. The design of the cask marks found on this shipwreck consists of the letter combination “SD” (Figure 7.20_1). These cask marks could be identified as product identification marks thanks to extensive research of written sources, which provided insight into the meaning of the cask marks discovered on the shipwreck.⁴²⁰ It should be noted

⁴²⁰ Tran et al., 2025.

that extensive research was necessary to confidently interpret these cask marks as product identification marks. Without this research, the analysis of these identification marks would not have been conclusive.

The *Burgzand Noord 4* shipwreck has been identified as the frigate *'t Hart*, which sank near Texel in 1751.⁴²¹ As stated in section 7.7.4, casks containing coffee beans were found on this ship, originating from the Surinamese plantation Sardam, owned by Jan Pietersz Visser. These casks were marked with the personal identification mark "IPV" and the product identification mark "SD," clearly identifying the product as originating from the plantation Sardam.

Despite the fact that only 16 product identification marks were found among the 1,021 marks recorded in the Database WOODAN Cask Marks, this set still represents one of the largest find complexes. Namely, all these cask marks were discovered on the same ship, meaning they were used within the same timeframe and the cask marks of "SD" all originated from the same location. Because all the cask marks were found on the same ship, the formal agreements regarding the trade transaction of the casks bearing the product identification marks are also likely to have been the same.

Despite these 16 marks originating from the same find complex and their design being consistent, they still show variation in both the method of application and their location on the casks. They were applied using a timber scribe (n=8), a branding iron (n=5), and a brush (n=3). Additionally, the marks' placements on the casks vary, with marks documented on the head (n=9) and the bilge (n=7; Table 7.7). This variation is present not only within the find complex but also on individual casks. On cask H, the mark "SD" was found three times, variously applied with a brush, timber scribe, and branding iron. Possibly, the cask was reused multiple times to transport products from the Sardam plantation, with a different mark being applied each time. However, it remains unclear why three identical product identification marks, applied using three different methods, were placed on the same cask.

7.8.4.2 Personal identification marks

Personal identification marks account for 43% (437 out of 1,021) of all marks in the Database WOODAN Casks Marks, making this type by far the most frequent cask mark to appear (Table 7.7). This type of cask mark is also extensively described in written sources and has received relatively much academic attention. In these studies, personal identification marks were compared to signatures, and they also provided insights into their features (Section 7.7.4).

The personal identification marks found in written sources exhibit significant diversity in their design, ranging from combinations of strokes and simple letter combinations to more complex representations (Section 7.7.4). This significant

⁴²¹ Tran et al., 2025.

diversity in design also appears in archaeological contexts. Marks consisting of initials were found on casks in archaeological contexts, such as the “IPV” mark that can be linked to plantation owner Jan Pietersz Visser (Figure 7.20_2). Initials were also combined into monograms, an example of which is the branded mark “GP” (Figure 7.20_3). In total, letter combinations—whether or not formed into monograms—account for 31% (137 out of 437) of the cask marks identified as personal identification marks in the database.

The remaining 69% (300 out of 437) primarily consist of a combination of strokes or geometric shapes. These marks can also be linked to individuals associated with the trade of the respective casks, an example of which is shown in Figure 7.20_4.

Written sources contained no regulations about how personal identification marks were to be applied (Section 7.4). It would make sense for an individual to invest in a branding iron or strike iron, as this type of cask mark would be used regularly and there would be no need to alter the mark over an extended period of time. However, in total, 80% (350 out of 437; Table 7.7) of the personal identification marks were applied using a timber scribe (Figure 7.20_2, 4), while only 8% (37 out of 437) were made with a branding iron, as seen in the example in Figure 7.20_3. Likely, using a timber scribe was more practical because it did not require heating, as did a branding iron.

The lack of specific regulations regarding the location of personal identification marks on casks allowed for variation in placement (Section 7.7.4). This is reflected in the Database WOODAN Cask Marks, where this type of cask mark is found in various locations on the casks. In total, 32% (141 out of 437) of the marks were applied to the heads, 64% (280 out of 437) to the bilge, and the location of 4% is unknown (Table 7.7). The examples of personal identification marks from archaeological contexts also show that there was no standard location for the placement on casks.

7.8.4.3 Corporate identification marks

The Database WOODAN Cask Marks holds only three corporate identification marks from archaeological contexts (Table 7.7), two of which are shown in Figure 7.20_5, 6. No specific regulations for this type have been found in written sources, but examples from archaeological and iconographical contexts are provided in section 7.7.4.

In an archaeological context, one example of a corporate identification mark closely resembles the examples from iconographical contexts of this type of cask mark (Figure 7.14). Both cask marks are painted and applied to the head, featuring a representational element in which a lion can be recognized. These marks are interpreted as a corporate identification mark of a beer brewery. This interpretation is based on the context in which these marks appear in iconographical sources, where casks of beer are depicted in taverns. Of course, these could also represent

casks of other beverages, but the characteristics of the casks depicted in the paintings align with those of beer casks, such as their size and the number of staves and headboards.⁴²²

Another example of a corporate identification mark was applied to the bilge of a cask (Figure 7.20_6), where the VOC logo can be recognized. This mark originates from an urban archaeological context, where the cask was repurposed as a shaft for a cesspit. This cask was likely owned by the VOC, of which an example was also found on the VOC ship *De Amsterdam* (Section 7.7.4).

Of all the types of cask marks, the corporate identification mark is the least frequently encountered, accounting for only 0.3% (3 out of 1,021) in the Database WOODAN Cask Marks (Table 7.7). This is due to several factors. First, a cask mark of this type can only be identified as the logo of the respective corporate entity if the logo of that entity is known, as is the case with the VOC mark.

Second, there is a twofold explanation for the relatively rare occurrence of painted marks on the heads of casks linked to breweries. A large portion of the casks with marks found in the database come from urban archaeological contexts, where they had been repurposed as shafts for cesspits or wells. In many cases, the heads of the casks used in this manner were removed to create a cylinder by stacking the casks on top of each other. Naturally, the cask marks on the heads were also lost. Additionally, it is expected that the painted marks, which appear on casks from maritime archaeological contexts, are less well-preserved in the archaeological record compared to marks that were applied in other ways.

Third, there is a possibility that casks with corporate identification marks remained in the possession of the corporate entity in question, even when sold with their contents to establishments like taverns. In this case, an equivalent of a deposit system may have been in use. Casks would have been returned to the corporate entity once emptied, and as a result, would not have been repurposed as shafts for cesspits or wells.

7.8.5 Count marks

In the Database WOODAN Cask Marks, 125 count marks have been registered (Table 7.8). Due to the paucity of information from written sources on count marks on casks, their features are derived from architectural-historical research, which focusses on count marks from structural elements of buildings (Section 7.7.5). From this research, a design of the count mark emerges that typically consists of Roman or Arabic numerals or tally systems or their late medieval or early modern equivalents. The variation in count marks has also been observed in examples from archaeological contexts. An example of a tally system, representing the number 4,

⁴²² Oosterbaan, 2023.

is shown in Figure 7.21_1. The example in Figure 7.21_2 possibly represents the number 25, where the two longer diagonal lines indicate tens, and the single short diagonal line represents five.⁴²³ The count marks that consist of tally systems are by far the most common in archaeological contexts, with 111 out of the 125 count marks. The use of Roman numerals (Figure 7.21_3; n=12) and Arabic numerals (Figure 7.21_4; n=1) as count marks on casks from archaeological contexts has also been encountered but is much less common.



Figure 7.21: Examples of count marks: 1. Count mark, tally system; 2. Count mark, medieval tally system; 3. Count mark, Roman numerals; 4. Count mark, Arabic numerals. Sources: 1. Manders, 199. ID969; 2. Vernimmen, n.d., 1. ID413; 3. Verduin, 2019, 245. ID410; 4. Manders, 1996. ID919.

Table 7.8: Number of count marks, by mark characteristic.

Context type	Number of count marks
Maritime	42
Urban	68
Rural	15
Total	125
Application tool	
Timber scribe	67
Knife or timber scribe	8
Strike iron	1
Knife	48
Unknown	1
Total	125
Location on cask	
Head (interior)	2
Head (exterior)	27
Bilge (centre)	57
Context type	
Bilge (centre near hole)	10

⁴²³ Janse, 1990, 5.

Bilge (bottom)	20
Unknown	9
Total	125

The research based on written sources and that based on architectural-historical research has not provided meaningful insights into the method of application of count marks on casks. However, architectural-historical research has shown that count marks were applied with either a timber scribe or knife on structural elements of buildings (Section 7.7.5). The count marks on casks from archaeological contexts show the same methods of application; 123 out of 125 count marks were applied with either a timber scribe or knife (Table 7.8).

Count marks were applied at various locations on the casks (Table 7.8). The most common locations were the centre of the bilge (n=57), the bottom of the bilge (n=21), and the exterior of the head (n=27). This variation is likely not as closely related to regulations as may be the case for other types of cask marks; practicality may be the reason. For example, when casks were stacked, whether on a ship or elsewhere, not all parts were accessible for placing a count mark.

7.8.6 Content quantification marks

Content quantification marks are identified 50 times in the Database WOODAN Cask Marks. Most of these were discovered in urban archaeological contexts (n=36; Table 7.9). These marks are primarily identified by their distinctive design, consisting of a series of horizontal lines, sometimes combined with smaller vertical lines and crosses, as described in written sources (Section 7.7.6).

All the content quantification marks in the database have been labeled as wine gaugers' marks, indicating that the casks were used to transport wine. The examples from archaeological contexts, sharing the features described in written sources, consist of a series of horizontal and vertical lines (Figure 7.22). In some cases, a half-oval was also used to indicate the contents (Figure 7.22_1). Many examples of this type of cask mark are relatively large and extend across multiple staves (Figure 7.22_1, 2).

The characteristic cross of the wine gaugers' mark has also been found on many casks from archaeological contexts. In most cases, the marks consist of a single cross placed directly adjacent to the series of lines that indicate the contents (Figure 7.22_1, 2, 4). This indicated a final tally and made it more difficult to add lines, which would fraudulently increase the marked volume after the wine gauger had completed his work. A smaller cross could also be placed above and/or below the marked content to ensure no more lines could be added (Figure 7.22_3). According to researchers Potze and Van Gangelen, the presence or absence of the single large cross may be an indication of the city or region where the cask mark was applied. They state that the wine gaugers' mark from Cologne did not include

a large cross, which would ensure no more lines could be added.⁴²⁴ To analyze whether this pattern also appears in examples from archaeological contexts, casks with a provenance established through dendrochronological analysis were compared with the presence or absence of a large cross. The wine casks made from wood from the Rhine region were also likely filled with wine from this area and transported through Cologne to export markets.

In total, the origin of only 10 out of 50 wine gaugers' marks was successfully determined using dendrochronological analysis. Of these, two wine casks with a wine gaugers' mark were made from wood originating from Rhineland. One of these marks does not contain a large cross, while the other one does (Figure 7.22_4). For now, no clear correlation can be determined between the design of the wine gaugers' mark and the provenance of the timber used.

It is also noteworthy that there are multiple examples of casks featuring more than one wine gaugers' mark. Figure 7.22_1 presents an example of this, where a mark with a large cross is visible directly below the bunghole. Below this cross, a smaller wine gaugers' mark has been applied that does not use the large cross but instead has a smaller cross (to ensure no more lines could be added) above tally lines that indicated the quantity of the wine.

The presence of multiple wine gaugers' marks on the same cask suggests that the cask had been reused as a wine cask and that the presence of a previous wine gaugers' mark was not necessarily a problem. Furthermore, this particular cask features two marks of different design. These may have been applied in different cities, suggesting that the wine cask was traded through different cities and along different trade networks.

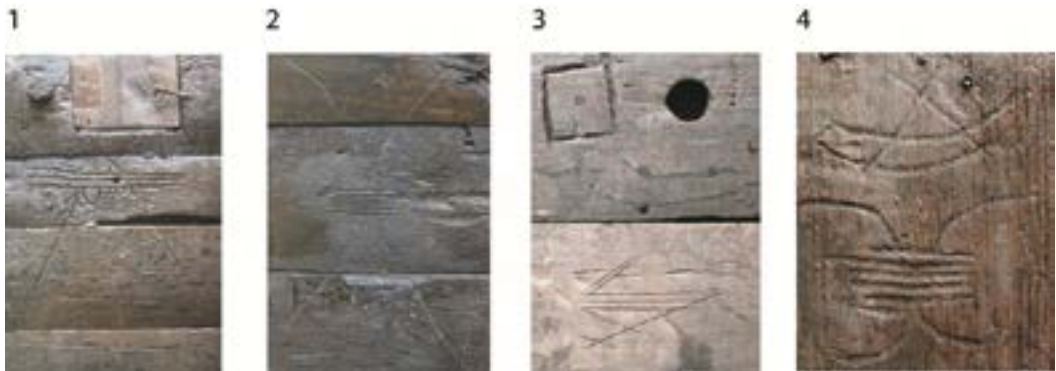


Figure 7.22: Examples of content quantification marks: Sources: 1. Vernimmen, n.d., 2. ID385; 2. Vernimmen, n.d., 2. ID386; 3. Knippenberg, 2007, 47. ID572; 4. Hoogendijk, 2020, 125. ID623.

⁴²⁴ Van Gangelen & Potze, 2017, 140.

Table 7.9: Number of count marks, by mark characteristic.

Context type	Number of content quantification marks
Maritime	2
Urban	36
Rural	12
Total	50
Application tool	
Timber scribe	40
Knife or timber scribe	8
Knife	2
Total	50
Location on cask	
Head (exterior)	5
Bilge (centre)	28
Bilge (centre near hole)	10
Bilge (bottom)	4
Unknown	3
Total	50

Written source material prescribes the use of a timber scribe exclusively for applying wine gaugers' marks (Section 7.7.6). This corresponds to the wine gaugers' marks found in archaeological contexts, where 40 out of 50 marks were made with a timber scribe. In eight out of 50 cases, it was not immediately clear whether a timber scribe or a knife was used. In only two examples of this type of cask mark was a knife definitely used.

The prescribed location for wine gaugers' marks, on the bilge next to the bung hole (Section 7.7.6), was followed in 56% of cases (28 out of 50). The remaining marks of this type were found on other parts of the bilge (n=14) and, in a few instances, on the heads (n=5). The application of the wine gaugers' mark appears to be sufficiently resistant to practical variations that the prescribed guidelines were not always be adhered to.

7.9 Conclusion

This sub-study focuses on the marks found on casks from archaeological contexts in the Netherlands, dating from the Late Middle Ages to the Early Modern period (1300-1800). These cask marks represent a valuable and largely untapped source for understanding the socioeconomic dynamics of trade and consumption. Despite their potential, they have not yet been studied in a comprehensive manner. As a result, cask marks are often only superficially described in archaeological reports. The main objective of this research is to address the current gap in the study of cask marks through developing

a typology of cask marks and to assess whether this typology is suitable for cask marks from Dutch archaeological contexts.

The development of this typology required insight into several key sub-topics, including an overview of research on cask marks, the identification of their most distinguishing features, and an understanding of the potential function of the cask marks. To address these topics, each was initially investigated separately, guided by specific sub-research questions.

Research on cask marks, spanning various academic disciplines, reveals a notable lack of comprehensive studies on the subject. Studies of cask marks from archaeological contexts typically focus solely on those found at a specific site and describe the marks in a superficial manner. On the other hand, research based on architectural and historical data and written sources primarily focuses on cask marks that were applied for a specific purpose and therefore does not provide an overview of all possible functions. However, by analyzing the research results from these different academic fields in tandem, a broader understanding was gained regarding the reasons for the application of cask marks and their features.

The most distinguishing features were identified based on findings from previous studies. First, the design of the marks, ranging from simple scratches to tally systems and monograms with letters, is considered an important feature. Second, the location of a cask mark is considered significant for classifying marks, with distinctions made between marks found on the heads (interior and exterior) and on the bilge (bottom, centre, or near the hole). Third, the method of application is a significant feature, as the marks were applied using various tools, such as a timber scribe, knife, branding iron, compass, brush, or strike iron.

To gain further insight into the methods of application, a photometric stereo technique was used to examine the cross sections of cask marks applied with a knife, timber scribe, and branding iron (Figure 7.3). As expected, the sub-study revealed that the cross section of marks made with a knife were V-shaped, in contrast to the U-shape left by a timber scribe or branding iron. The research also showed that cask marks made with a branding iron leave a shallower impression compared to those made with a timber scribe.

Before the information gathered on several key sub-topics was used to develop a typology, the different functions of cask marks were examined. For marks with a specific function, insights could be drawn from previous research, while for others additional investigation was required. This involved consulting primary written sources and conducting interviews with present-day coopers, whose expertise proved valuable. The collected mark types were then analyzed in relation to the phases of the cask lifecycle and the actors involved in their application. This comparative approach not only provided deeper insights into the significance of cask marks but also allowed for the identification of missing types to be incorporated into the typology.

The typology for cask marks from the Late Middle Ages and Early Modern period in Dutch archaeological contexts is structured into six primary types. Four of these main types are further divided into subtypes, resulting in a total of 11 distinct types and subtypes, organized hierarchically (Figure 7.6). Each type within the typology has a unique function and purpose, and they are presented in a chronological order based on the lifecycle of a cask. The first types correspond to the first phase of the lifecycle, production, while the remaining types are associated with the second phase, a cask's use as a transport container.

The first type of marks to be applied in a cask's lifecycle were production marks, which are further divided into two subtypes, construction marks and coopers' marks. Construction marks were applied by coopers to assist in assembling casks or reassembling them correctly and efficiently after temporary disassembly. Coopers' marks were used to identify the craftsman who made the cask.

As part of the final step in the first phase of a cask's lifecycle, casks were gauged to ensure they met required standards, a process carried out by inspectors appointed by urban authorities. Inspectors determined whether a cask met the standards and indicated this by applying either an approval mark or a rejection mark on the cask. For each of these functions, a separate subtype has been assigned in the typology.

The casks then began the second phase of their lifecycle as transport containers, when they were filled with merchandise. For certain products like herring, the contents were inspected to assess their quality, which led to the application of a content gauge approval or rejection mark.

Throughout their use as transport containers, casks could also be marked with identification marks, which indicated the product or individuals and corporate entities associated with the cask's contents. Each of these specific functions has its own subtype within the typology. Additionally, in the context of trade, casks were marked with count marks, which were used to track quantity and ensure the proper accounting of goods being transported. Upon reaching their destination, certain products, such as wine, were measured to determine the applicable excise duty. Once the contents were measured, content quantification marks were applied, indicating the volume or quantity of the merchandise.

Once the typology was established, its suitability was evaluated by using it as a framework to assign cask marks from various Dutch archaeological contexts. For this purpose, a database was compiled, consisting of 1,021 cask marks, including 405 from maritime archaeological contexts, 527 from urban contexts, and 89 from rural contexts. The database is now accessible online at www.woodcaskmarks.org, providing researchers and other interested parties with the opportunity to explore and utilize the data.

The typology for cask marks proved to be suitable to assign a large segment of the cask marks from Dutch archaeological contexts. Of the 1,021 marks, 902 have been assigned a specific type or subtype. Of these 902 cask marks, 33 cask marks have been assigned to a main type, where further division into subtypes would also have been possible. For

these marks, there was insufficient information to assign them to a specific subtype. However, this still demonstrates that a hierarchical structure in the typology allows for a general classification of cask marks, when assigning the mark to a subtype is not possible.

Generally, the design of the cask marks was the most important feature in their classification. However, in some cases, other features were decisive. Coopers' marks, for example, are the only type of cask mark found on the interior of the head. Often, cask marks were classified based on a combination of features. For example, some marks were interpreted as construction marks because of both their design and the method of application.

Each type of cask mark served a unique function and has its own set of features. However, it is important to note that these features are not always exclusive to a particular type of mark. Some of the individual features of a cask mark type overlap with those of other types, but in different configurations. For instance, a mark can be placed at the centre of the bilge, applied with a branding iron, and featuring a monogram in its design. Based on the design alone, this mark could be classified as either a coopers' mark or a personal identification mark. However, an important distinguishing factor is the combination of the location of the mark—positioned on the centre of the bilge—and the method of application, which involved the use of a branding iron. When these two features are considered together, the likelihood of interpreting the mark as a personal identification mark increases, as this combination is most commonly associated with this type of cask mark.

In some cases, the assignment of specific cask marks to types was demonstrated using examples from archaeological contexts. One such example is a construction mark covered by a clamp, a structural element used to reinforce the head of the cask (Figure 7.17_2). Due to the placement of the clamp, the mark would have been largely invisible when the cask was being used as a transport container. This supported the interpretation of it as a construction mark, since this particular mark would not have been visible during the casks' use as a transport container.

In other cases, the analysis of examples from archaeological contexts has further elucidated the function of subtypes. For instance, the concentric lines of construction marks (Figure 7.8_3, Figure 7.17_1) were likely not only used to determine the orientation of the heads on the cask but also to place the measurements when outlining the contours of the heads. However, this additional function did not lead to a separate classification within the typology. Instead, it provided further insight into the function of an existing subtype.

Although it may seem unusual to encounter a cask without any marks, this does occur in archaeological contexts. This is evident from the casks found at the terrestrial archaeological site at Vlissingen Groote Markt where 85 barrel wells were uncovered.⁴²⁵ These barrel wells mostly consisted of stacked casks, resulting in a total of approximately

425 Oosterbaan, 2015, 253–254.

135 casks from this excavation. Only 32 of these casks showed one or more cask mark, indicating that approximately 24% of the casks were marked.

A possible explanation for the absence of marks on many casks is that several of the typology's cask mark types were usually applied only to casks intended for export. Written sources mention this in the case of content gauge marks used for herring (Section 7.7.3). A similar pattern can be expected for content quantification marks, as these were mostly associated with products like wine, which were transported to other cities and passed through trading hubs where such marks were applied. The same likely applies to other types of marks, such as cask gauge marks.

The absence of cask marks in urban archaeological contexts may also be related to the period following their use as transport containers. When casks were repurposed as barrel wells, their heads were often removed, resulting in the loss of any marks that had been applied to the heads. Additionally, casks recovered from archaeological excavations are often covered in soil, and identifying marks requires thorough cleaning. Due to time constraints, this cleaning was not always carried out, which means marks may have been overlooked.

The absence of marks on casks from maritime archaeological contexts cannot be attributed to the possibility that the casks were not intended for export, as they are often found in the holds of ships engaged in long-distance trade. In these cases, post-depositional processes likely played a significant role. First, much of the wooden material is affected by shipworm (*Teredo navalis*) and the abrasive action of sand in the dynamic tidal environments that characterize much of Dutch water. Second, after a ship sinks, casks often disintegrate, and maritime archaeologists typically recover them as a large collection of cask components. This fragmentation makes it particularly difficult to reconstruct larger cask marks that originally extended across multiple staves or head pieces.

For cask marks from both urban and maritime archaeological contexts, it appears that they have not always received the necessary attention during the analysis of the recovered material. This may be due to a lack of recognition of their research potential, largely caused by the absence of comprehensive studies of cask marks. Without a clear typology or analytical framework, the marks may have been viewed as incidental or unimportant, and thus not systematically documented or interpreted. This sub-study aims to address this gap by introducing a typology for cask marks and enabling more targeted and systematic investigations.

Moreover, it would be valuable to approach the study of cask marks through the lens of specific product categories. Focused investigations into the types of marks used on casks intended for products such as beer, wine, herring, or oil could reveal patterns of marking practices tied to specific products. Such research would not only clarify the function and meaning of individual marks but also enable scholars to retroactively identify the original contents of casks based on their marks.

By combining this research on cask marks with the proposed future studies, cask marks can serve as a powerful tool for exploring broader socioeconomic dynamics. They have the potential to shed light on patterns of production and distribution, the enforcement of quality standards, and shifts in consumption behavior across different regions and time periods. In this way, the sub-study of cask marks contributes meaningfully to our understanding of the economic, social, and regulatory frameworks that shaped trade and material culture in the Late Middle Ages and Early Modern period.

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⁴²⁶ Database Merchants Marks, n.d.

