Universiteit Leiden
The Netherlands

I. Use and construction of galleys in The Netherlands. II. Burgundian galley-gear. III. The red and the black: technical data on galleys from government papers

Lehmann, L.Th.

Citation
Lehmann, L. T. (1978). I. Use and construction of galleys in The Netherlands. II. Burgundian galley-gear. III. The red and the black: technical data on galleys from government papers. *Mededelingen Van De Nederlandse Vereniging Voor Zeegeschiedenis*, *36*, 11-26. Retrieved from https://hdl.handle.net/1887/4305540

Version:	Publisher's Version
License:	Leiden University Non-exclusive license
Downloaded from:	https://hdl.handle.net/1887/4305540

Note: To cite this publication please use the final published version (if applicable).

verschenen is. We beschikken over geen enkele aanwijzing dat Gastaldi en Mercator met elkaar in verbinding gestaan hebben, hoewel er vrij veel correspondentie van Mercator bewaard gebleven is. Er is geen enkele overeenkomst tussen Mercator's wandkaart van Europa en deze uit 1573. Toch heeft ook Mercator gebruik gemaakt van de bronnen van Herberstein en Olaus Magnus, waaruit blijkt dat twee kartografen die gescheiden van elkaar dezelfde bronnen gebruiken, tot verschillende resultaten kunnen komen.
Bekender dan zijn Europakaart is de wereldkaart van Mercator uit 1569, de kaart waarop voor de eerste maal de afbeeldingsmethode met wassende breedtegraden werd toegepast, waaraan de naam Mercatorprojectie verbonden is. Van deze wereldkaart in achttien bladen bezit het Maritiem Museum "Prins Hendrik" een uniek exemplaar dat in de vorm van een atlas in de tijd van Mercator werd samengesteld. Nog slechts twee andere exemplaren zijn in de wereld bekend. In meer dan één opzicht past de aankoop van de wandkaart van Europa heel harmonisch in het reeds aanwezige kaartenbezit van het Maritiem Museum. Ten eerste werd nu de tweede oudste grote wandkaart aan Nederlands bezit toegevoegd: de eerste is de wereldkaart van Mercator uit 1569. De twee oudste gedrukte wandkaarten in Nederlands bezit bevinden zich nu dus in het Maritiem Museum "Prins Hendrik". Ten tweede werd een Italiaanse kaart uit de 16e eeuw toegevoegd aan een reeds aanwezige collectie Italiaanse kaarten die in de jaren 1910-1940 door dr. W.A. Engelbrecht verzameld is. Naast de beroemde Vossius-collectie in de Universiteitsbibliotheek Leiden is het museum te Rotterdam de enige plaats in Nederland waar men de zeer zeldzame, 16e eeuwse Italiaanse kaarten in zulke aantallen kan aantreffen. Juist voor de bestudering van de werkmethoden in de kartografie van de 16e eeuw biedt de combinatie van de nieuw verworven wandkaart met de bestaande regionale kaarten uit de collectie Engelbrecht ideale mogelijkheden. Onder de 16e-eeuwse Italiaanse kaarten uit deze collectie bevindt zich ook een aantal kaarten van Europese landen van Jacopo Gastaldi die onmiskenbaar verwantschap met de wandkaart van 1573 vertonen.
Concluderende kan men stellen dat de uit particulier bezit afkomstige wandkaart na vier eeuwen haar meest passende bestemming in openbaar bezit gevonden heeft.

I Use and construction of galleys in The Netherlands

II Burgundian galley-gear

III The red and the black: technical date on galleys from government papers

Mr. dr. L.Th. Lehmann

I. Use and construction of galleys in the Netherlands

Hugo de Groot in his "Annales et Historiae de Rebus Belgicis" wrote, that in 1599 "contra remiges Spinolanos ut omni coelo certaretur, navis longa, ignotum ante Batavis, Dordrechti struitur" (edition 1657, book IX, p. 403). Joan Goris translated "Theegen de galeyen van Spinola, om by alle weeder en wind te vechten, is een galeye, den Hollanders tevoren onbekendt, tot Dordrecht gebouwd". This means: to fight, in every weather and wind, against the galleys of Spinola, a galley, unknown before to the Dutch, has been built at Dordrecht. He found followers until the present day. Authors, Dutch, Belgian and French (J. van Beylen being an exception) have vied though giving different reasons and examples, in stating that galleys were an utterly alien element in these waters. In how far were they right?
For centuries the galley was, of course, no 'ignotum' for Dutchmen that travelled. In 1343 count William IV of Holland sailed to the Holy Land in a galley he had hired in Venice (Hamaker, III, pp. 203-206). But it was not necessary to go so far. In 1294 the French king had his "clos des galées" at Rouen (Masson, p. 13). Through the middle ages the French and English kings fought each other's subjects with galleys (La Roncière, I and II, passim). In the 14th-century Rijmkroniek (rhyming chronicle) by Melis Stoke a naval battle off Zierikzee in 1304 is described. It was fought between Hollanders and Flemings and both sides used "galeiders" (edition 1699, p. 234). The dukes of Burgundy had galleywharves and -depôts in Flanders (Degryse).
In spite of all this we read in Philippe de Cleeres "Instruction de toutes manières de guerroyer" (Oudendijk, 1941), written about 1500, that galleys should only be used in the Mediterranean. If this was considered a rule, we saw how often it was broken. Worse was to follow. In 1548 Nicolas de Villegagnon collected Mary Stuart at Leith with galleys and sailed home to Brest around Scotland and Ireland (Masson, p. 96). Spaniards sailed galleys across the Atlantic (Guilmartin, p.63).
Until the early deccennia of the 16th century not only war- but also merchant-galleys came very near. These were used in the Mediterranean for freight- and passenger transport (pilgrims), but they also sailed through the Straits of Gibraltar to England and Antwerp (Rawlinson). Of these ships the galleys in the woodcuts of Eerhaert Rewich in Breydenbach's report of his pilgrimage to Palestine (Breydenbach), but also in the anonymous woodcut of a prospect of Antwerp (Cornette, pl. XX), are probably representations. Though a manuscript in the National Library at Florence (Trattato del Fabbricar Navigli) gives us the proportions of the hull of a "galea di Fiandra", it does not tell us enough to show us inhowfar these representations are accurate. In the 16th century the French and English kings and queens still had their galleys in the Channel and the North sea (Bennell). These were not the only oared vessels in these waters. One hears about row-barges, in Dutch "roeibaerdtzen" and in French "roberges" or "ramberges" (La Roncière, III, p. 457-459). Several row-barges and a galley are depicted in the Anthony Anthony roll, part of which is preserved in the British Museum and the rest in Magdalen College in Cambridge. It is a scroll of parchment with drawings and descriptions of the ships Henry VIII had in 1543 (?). The row-barges look like smaller versions of the sailing-ships of those days. Perhaps the "baerdtze van Hoorn" (Velius, p. 106) from 1517 and the "galeota" of Amsterdam (Hermannus, p. 526) from 1504 looked like that. Perhaps they were earlier versions. The descriptions are too vague to judge.
When the revolt of the Netherlands had begun we are told in a matter of fact way, that both sides used galleys. Gaspar de Robles (Bor, p. 450 and 650; Velius, p. 237) had them in Friesland and Groningen. Amsterdam, still on the Spanish side, in 1573 had "stadtsgallaeyen"

(town-galleys), bills for the armament of which are preserved in the Municipal Record Office. These were frequently engaged in battle with the galleys of other towns in Nort-Holland (Velius, pp. 179, 182, 184, 186, 194, 201 and 202). At Haarlem three galleys were built during the siege (Verwer, pp. 38, 42, 51, 52 and 62). Galleys played a part in the relief of Alkmaar (Boomkamp, pp. 231, 239, 244, 269, 306) and Leiden (Hooft, pp. 380, 384, 387).
After the fighting had stopped in the northwest, the sea-beggars had vanished, and the pacification of Ghent had taken place, we do not hear much about galleys anymore. Still, J.C. de Jonge quotes a document from 1585, in which the sovereignty of the Netherlands was offered to Elizabeth I. It gives an inventory of the fleet, which mentions "quelque seize ou dix-sept galères, grandes et petites (De Jonge, I, p. 747). Later writers, headed by Witsen (Witsen, p. 194) have contended that the galleys of these years were not real galleys, only flat-bottemed boats rigged as such, but earlier writers mention galleys apart. Velius writes about "free-booters" yachts rigged galley-wise" (Velius, p. 231), but elsewhere about galleys plain. Verwer mentions not only galleys, but "royschuiten" (roy meaning row, the author does not know an english equivalent for schuiten) as well. Hooft too, in the chapter about the siege of Leiden in the "Nederlantsche Historieën" (Netherlands Histories) mentions galleys, flat-bottomed boats and other oared ships apart. Now one may ask what is the difference between galleys and other oared ships. There is a difference, though we do not know if it was that which made Velius and Verwer and their contemporaries distinguish them.
In many books all oared warships, like those from classical antiquity and those of the Vikings are called galleys. However, the earliest Greek trieres were open boats and when they had decks, the two lowest tiers of oares passed through holes in the hull. Vikingships were open for the greater part and also had oarports in the hull. But when, in the 16th century, we get to know what galleys were like, we see that the hull was almost entirely closed. There were a few hatches in the deck, the masts had to pass through and a few, very small port holes were aft, where the hull was highest. The whole rowing apparatus was placed on deck. Older Italian pictures give a strong inpression, that this arrangement had been in existence for centuries. It is of course an open question whether this type of ship was meant when the name "galley" was first used. The first instance of the use of the word that has come down to us is in a Byzantine military manual "Taktika" (XIX.V.3.2.) from the 9th century, ascribed to the empeperor Leo the Philosopher.
There is another indication. Galleys had their heaviest gun forward in the centerline. The others were grouped on both sides of it, symmetrically if possible. So a galley had to have an odd number of guns. Also, on deck level, there was a ram, called "spur" in the Latin languages and in Dutch evidently "pen" (pin) (Velius, p. 228; Van Meteren, fol. 430 d.). But whether the authors quoted had these criteria in mind when calling a ship a galley or just went by general appearance, we cannot tell.
After 1597 we hear more about galleys, viz. in the resolutions of the States of Holland and Westvriesland, that in this year passed the resolution to build a galley for convoy- en guard-services in the waters of South Holland and Zeeland (resolution dated 12.12.1597). The galley was built at Vlaardingen, after a Spanish model, and was finished in 1598. Bartheleus van Buren became her captain (resolution dated 17.7.1598). Bijl (pp. 52-62) contended that van Buren had taken the initiative for building the first "large" galley in the Netherlands. But the Vlaardingen galley was to be 70 feet long, while the largest galley built at Haarlem in 1573 was 120 feet long. It is useful to remember this number. What perhaps van Buren was the first to introduce after the revolt, was a system of condemnations and police-raids to get rowers (Hallema). The next year he was giving advice for the construction of a larger galley at Dordrecht (resolution dated 12.12.1599). The Vlaardingen one was since known as the small- or the red galley, the Dordrecht one as the large- or black galley. For centuries galleys had been called the red and the black. Henry VIII had his red and black galleys (Bennell). There was a red galley at Naples in 1275 (d'Albertis, app. I). With the Dordrecht galley we have arrived where Hugo de Groot started. Her captain was Jacob Michielsz Wip (resolution dated 17.8. 1600). On 7.11.1600 he undertook, accompanied by several smaller oared vessels, a raid on Antwerp, where several Spanish warships were captured (Van Meteren, fol. 430 d.). This, in a hurriedly written pamphlet, was called a "Romeyns feit" (Roman feat) (Verhaghen).
In the meantime other things, alluded to by De Groot in the above quotation, had happened. In 1599 the Genovese Federico Spinola sailed north from Spain with eight galleys and arrived at Sluys with six. From the letters home of Paul Chouart de Buzanval, the French Ambassador with the States, of which a manuscript copy is in the Royal Library at The Hague under

the title "Propositions" we can read how people reacted to this. It is in short the common reaction to galleys: as long as they are not there "on craint peu icy ce dessein, d'autant que cette mer est trop furieuse pour les dites galleres" (Propositions 14.3.1599). Here we hear again: galleys should stay in the Mediterranean. But then they enter The Channel under sail and turn out to be faster than the sailing-ships of Justinus van Nassau, who chases them for hours (Propositions 14.9.1599). By the time Spinola is in Sluys, there is nearpanic, not quite unjustified, for the galleys with their shallow draught could reach places sailing-ships could not and were dangerous self-propelled landingcraft. It is decided to employ more galleys. They have to be built and the resolution of the 7th of December 1600 gives a concept after which they are to be built. Not all details are given. It was probably taken for granted, that the shipbuilders, many of whom must in their youth have worked for the Spaniards, could fill those in for themselves. It is perhaps impossible to decipher this concept exactly, but that what is clear tallies with data we have from Italy and France in the beginning of the 17th century (Crescentio, Hobier), so that is no doubt that "real" Mediterranean galleys were meant. They were to be 120 feet long, just like the largest galley built in Haarlem during the siege. We do not know exactly how many galleys were built, but from later resolutions we know that there was one at Amsterdam, one at Hoorn, one at Rotterdam and one in Zeeland.
The presence of Spinola did not only alarm the Dutch. Elizabeth I of England had four galleys built against him (Bennell). In 1603 the tension ends abruptly. Spinola, who by that time had eight galleys and four frigates (small oared ships in those days), is beaten by a Dutch squadron, which according to the legend on a contemporary print by Johan Mes, preserved in the Scheepvaartmuseum at Amsterdam, included two galleys. One the black galley of Dor- and the other the galley of Flushing, called *De Fles* (The Bottle, probably from the bottle displayed in the Flushing town arms), which may have been the Zeeland galley of the 1600 building program. Spinola was killed, so was Wip (Van Meteren, fol. 468 a.).
After this date the use as well as construction of galleys in the Netherlands becomes mysterious. A letter from the States, dated 3.5.1609, makes it probable that all galleys were discarded at the beginning of the twelve year truce, but there are indications that there still was a galley at Schiedam after 1630 (Bijl, app. XXXV). In 1906 G. Sello wrote, that in the "war" between Bremen and Oldenburg about the toll in the river Wezer at Elsfleth, those of Bremen used a "neue, wohlmontierte Galleie aus Holland" (a new, well-equipped (?) galley from Holland). Neither in the Netherlands nor in Bremen has anything been found to corroborate this statement, but it must be said that since World War II the State Record Office at Bremen has lost many documents. In Oldenburg there is a pile of depositions that the Oldenburg authorities collected in 1620 with the purpose to lodge a complaint with the emperor against the "barbaric" behaviour of the Bremers in 1619. The result is a lively but rather muddled story. One man saw that Bremen had acquired a "neue, wohlmontierte Tonnenbojer (a boyer to set out buoys?) aus Holland". There was also an old "Tonnenbojer" and these two operated together, one Wilhelm Hoyer being captain of the new one. But somebody else was stopped by a "Galleie" of which Wilhelm Hoyer was captain. Perhaps the imperial chancery was confused as well, or they had other information, for in the "Mandat" they sent back to Oldenburg, we see for the first time the formula that Sello copied.
In all biographies of the Danish admiral Kort Adeler (e.g. Holck) it is said that in 1663 he was by King Frederik III sent to the Netherlands to have one or more galleys built. The Swedish "Svenska Flottans Historia" (II, pp. 52-55) tells us about repercussions in Sweden. A Dutch galley figures there like the secret weapon in a spy-novel. The Swedish representative in the Netherlands, Petter Trotzig, wrote in some alarm that the Danes were going to have a Dutch galley, and a Swedish master carpenter, Petter Cron, who was going to Amsterdam to marry, was entrusted with the mission to try and make a drawing of the vessel. In these sources the name of the Dutch galleybuilder is given as Jan Isbrands. Nothing is known about what came of these plans, but the Swedish author deems it significant that in 1664 a galley "after the Turkish fashion" was launched at Göteborg. Neither in the Netherlands nor in Götenborg anything has been found to corroborate the ending of the story.
The Rijksmuseum at Amsterdam has a galley-model, the original of which is supposed to have been built in the Netherlands for czar Peter the Great. This is stated as a fact in international litterature (e.q. Anderson), but cannot be followed further back than 1858, when J.M. Obreen brought out a catalogue of the models then in possession of the Department of the Navy. Confusingly, according to a manuscript composed in 1724 by an Englishman in the Russian naval service, Peter the Great in 1721 bought a 32-gun frigate, called *The Galley of*

Amsterdam, in the Netherlands. This is another puzzling factor, that in countries, where galleys are poorly documented, ships that are not galleys sometimes have the word galley in their names. But in Scandinavia an abundance of documents in the Public Record Office at Kopenhagen, and models in the Orlogsmuseum there, and the naval musea of Stockholm and Karlskrona, show that when Denmark and Sweden had galleys, they were Mediterranean type galleys.

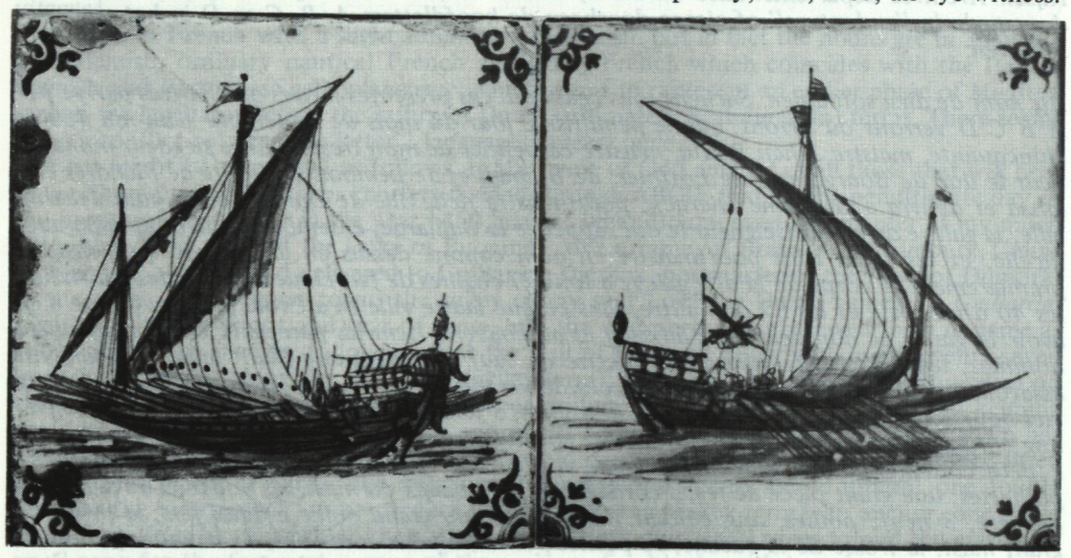
Especially the Adeler story gives the impression, that Dutch galleybuilders not only existed, but had international repute. It seems strange, that, if this is true, Nicolaes Witsen in his "Aeloude en Hedendaagse Scheepbouw" says nothing about them. He wrote a chapter about galleys, but stated expressly that his knowledge came from Italy. Special galley-technical terms he leaves in Italian. His illustrations he got from Crescentio and from "Architectura Navalis" by Joseph Furttenbach, published at Ulm in 1629. Illustrations from Furttenbach are still found in Van IJks book in 1697 and in Carel Allards' in 1716. This parsimony does not necessarily indicate unfamiliarity with galleys. In France galleys were regularly built, but in 1677 Dassié republished a drawing (badly copied) from Hobiers book of 1622. But Van IJk writes that he never saw a galley.

Was the building of galleys a more or less clandestine business? It is impossible to say, but thinking so may pave the way to pure phantasy. The most we can say is that galleys seem to be unpopular in these parts during the 17th century. Already in the pamphlet about the raid on Antwerp (Verhaghen) the author inveighs in prose and doggerel against those who think galleys a waste of money. Ironically enough the vignette on the title-page shows a sailing-ship! After the victory over Spinola in 1603 a medal was struck with the inscription "cendunt triremes navibus" (galleys give way to sailing-ships) (Van Beylen, p. 61), which is ungrateful. Witsen was objective, but pointed practically at some technical weaknesses in galleys. For their unpleasantness he referred without comment to "Guevarre". By that name he could harldy mean anybody but Antonio de Guevara, bishop of Mondoñedo, who in 1539 published a little book entitled "Libro de los inventores del arte de marear y de muchos trabajos que se pasan en las galeras" (Book of the inventors of the art of seafaring and of the many troubles one meets with in galleys). This prelate got his sealegs accompanying the emperor Charles V on his expedition to Tunis in 1535, but his booklet is rather elaborately jokey. He tells us galleys are no places for hygiene, privacy, gastronomy, morals or religious observance, but does not condem them as an instituation, which in his place and time was possibly not a safe thing to do. Van IJk was not objective, but eloquently scornful of galleys. His chapter on them is short and he tells those that want to know more, to read Furttenbach, who wrote in very pompous German, that the "fuerstlich, koeniglich, kaiserliche Galley" was a notable proof that all was for the best in the best of all possible worlds!

Lack of enthousiasm for galleys might have yet another cause. In France galley-officers were an aristocratic corps, having all kinds of privileges and looking down on the officers of the sailing navy. In more northerly countries nothing of the kind is, at least officially, know. So, while in the Netherlands the problem of what Samuel Pepys called "gentleman-captains", was far from unknown, there was nog galley-snobbery. The Englishman in the service of Peter the Great said that officers of sailing ships looked down on those of galleys, which may not mean more than that he served on a sailing ship. In France, Italy, Spain and Portugal there were two sea-languages. There was a group of technical terms for galleys and one for sailing ships. The former seems older and Meditarranean, the latter newer and probably imported from the Atlantic coast. Mixtures occur: modern Italian sea-language has elements of both.

In the little we know about Dutch galleys we do not notice any special galley-terms, nautical words are the same as in sailing ships. It is remarkable that a 16th century Dutch translation of Philippe de Clèves' little book a photocopy of which is in the Rijksarchief (National Record Office) at The Hague, carefully avoids all galley-terms, so that the sentences are sometimes mutilated. In thet 17th century two Spanish novels, in which scenes take place on galleys, were popular in the Netherlands. These were the picaresque novel "Gusman de Alfarache" by Mateo Alemán (1599) and Cervantes' Don Quijote (1615). The anonymous translater of the first (1669 ?) avoids and mistranslates, until he cannot skirt around "gúmenas", and translates rightly: ropes. Lambert van der Vos, who translated Cervantes (1657) acted likewise, but foundered hopelessly on "palamenta" (collective noun for a galley's oars), which he transleted as grapnel! Of course a random test like this does not mean much; we do not know how well up these writers were in sailing-terms.

The iconography of galleys in the Netherlands would deserve a special study. There are surprisingly many representations of them, even on tiles. There are topical prints of naval battles in which galleys took part and of prospects of cities with galleys in harbours or on roadsteads, but often one wonders whether the artist was a contemporary, and, if so, an eye-witness.



Two blue Dutch tiles, probably from the end of the 17th century, depicting a galley with the Burgundian flag. Museum Het Princessehof, Leeuwarden.

There are e.q. two contemporary prints representing the black galley of Dordrecht in the raid on Antwerp and in the battle of Sluys,. In the former (Cornette, pl. XXXVI) one sees a strange vessel, that owes something to the galleys in the Breydenbach illustrations, in the latter; the Johan Mes print we mentioned, a quite acceptable galley of the time.

After 1603 the Northern Netherlands seem to have had little contact with foreign galleys in their own waters. In 1672 Louis XIV did not use his galleys in Dunkirk against the Netherlands (Masson, p. 321), which is surprising, because, in the war of the Spanish Succession, they operated as far as Antwerp and Harwich (Masson, pp. 346, 350-351).

A survey of our date leads us to the conclusion, that in the Netherlands galleys have never been used so intensively as by the Meditarranean- and Baltic seapowers, but that they were not so utterly alien as many writers have believed.

II. Burgundian galley gear

As appendix 7 (which we reproduce here) to his article "De admiraals en de eigen marine van de Bourgondische hertogen" in Mededelingen van de Marine Academie, vol. XVII, pp. 139-227 (Antwerp, 1965) mr. Roger Degryse published an act from Dunkirk, dated the 29th of December 1405. It consists of a letter, signed by Walerand Albeel, townclerk of Dunkirk, who confirms that the hull and gear of the galley *La Gaillarde* has been delivered by the ducal master carpenter Jehan Bouta to the town of Dunkirk in the person of Willem Dierijcx, burgomaster. This is most welcome. The letter specifies and thus gives us the principal technical information we have as yet on Burgundian galleys. The reason for re-publishing it is the wish to elaborate further on the data furnished, though as yet it seems impossible to reach a definitieve conclusion.

Duinkerke, 29 september 1450

Akte, waardoor Walerand Albeel, stadsklerk van Duinkerke, bevestigt, dat Jehan Bouta, meester-timmerman van de hertog van Bourgondië, op 29 september 1450 een Willem Dierijcx, poortmeester, optredend in de naam van gans de gemeente Duinkerke, de hertogelijke galei,

"la Gaillarde", met bijbehoorten heeft overgemaakt en dit uitsluitend met de opdracht het vaartuig op het droge en beschut te houden.
Rijsel. Archives départementales du Nord, nr B 2.005/60.470. Origineel op perkament met doorsnede in "endenture" of zigzag doorheen de hoofdletters A, B, C en D in het groot geschreven.

Au nom de dieu soit amen. Sachent tous ceulx qui ces presentes lettres ou chartres partye par A B C D verront ou orront, que le penultisme jour du mois de septembre 1 an mil 400 et chincquante, maistre Jehan Bouta, maistre carpentier de mon tresredoubte siegneur monseigneur le duc de Bourgoinge, de Lotthier, de Brabant et de Lembourch, conte de Flandres etc, laissa et delivra a Guillume Dierijcx, poortmaistre dela ville de Dunkerke, en nom deladite ville, la galeye de monditseigneur le duc, appellee la Gaillarde, ensemble les biens et apparaulx dicelle, et les recut ledit poortmaistre en nom comme dessus en la maniere qui sensieut, premierement le corps de la dite galeye a tout 77 chaines de fer, clouez aulong des courtssies, les 40 d un coste et les 37 de l autre, sans ce que ladite ville en ait volu prendre charge n en avoir la garde, se non dela tenir au secq et au couvert. Item les parceaulx et biens cy aprez nommez, lesquelx ladite ville a fait mettre en sauf a la requeste dudit maistre Jehan. Est assavoir 3 gouvernailles, 3 mastes, 3 pieces de verghes, 2 voiles, ung latine et ung quarre, ung viel boursset, 1 double tente du chasteau gaillart, 3 fers de quatre marre, ung ancre, 1 cable et ung cordail, 4 pollies a tout ses stroues et coustures, deux petiz cordailles pour tirer le mast, 1 petit cordaille pour le mast devant, ung cordail de 3 pieces, chincq pollies chacun a deux polliettes, une grant piece de fer, 3 cordailles, dix hobancx du mast, les hobancx de la mizane derriere, 3 neufz pollies, ung cordail, 11 pollies, une grand pollie a deux fers, la trosse du grant mast, la trosse de la bazane, 13 petites pollies, 2 petiz cordailles, 21 navirons plommez, sept autres navirons non plommez, deux caepstandes, deuz vetes d arbora, une proyse, duex pieces d oste, dix grandes pieces de bos appellez vases, 40 pieces de bos dont les 24 gisent soubz la galeye et les autres 16 sont dedans la maison de la ville et ung petit bootkin a tout 3 navirons. Tesmoing le saing manuel de moy Walerand Albeel, clerc dela dite ville de Dunkerke, icy miz a la requeste tant dudit poortmaistre comme dudit maistre Jehan Bouta l an et jour dessusdit.
(edenture) A B C D

(get.) Albeel W.

Ter verklaring
Het schip, dat aan de schepenen van Duinkerke toevertrouwd werd, bestond uit de romp van de galei (corps) met de middenloopplank of brug (courtssies) en de zitbanken met de ketens (chaines de fer clouez aulong des courtssies).
De galei moet langs ieder zijde van 14 roeibanken voorzien geweest zijn, aangezien het aantal riemen met lood bezwaard of niet 28 bedroeg (21 navirons plommez, sept autres navirons non plommez).
Het aantal roeiers-galeiboeven moet 77 bedragen hebben, vermits de zitplaatsen in het totaal 77 ketens (77 chaines de fer) telden. Langs de ene zijde zaten er 37 roeiers, waarschijnlijk 9 rijen van 3, gevolgd door 5 rijden van 2. Langs de andere zijde waren het er 40, misschien wel 12 rijen van 3, gevolgd door 2 van 2.
Tot de toebehoorten van de galei behoorden in de eerste plaats de drie masten, namelijk de grote mast (grand mast), de fokkemast (la mast devant) en de bazaanmast (la mizane derriere) met hun raas of raatjes (3 pieces de verghes), kabels (cable), touwen (cordailles), blokken of katrollen (pollies), tuigage allerhande van de wand (hobancx) of de sprieten (trosse), evenals drie zeilen, namelijk een Latijns zeil, een vierkant zeil (2 voiles ung latine et ung quarre) en een oud boegzeil (ung viel boursset).
Daarnaast vinden we onder de toebehoorten ook nog een ankel (ancre) met ankerstukken (3 fers de quatre marre), een meerkabel (proyse), mastkabels (2 vetes d arbora), touwen om de masten op te richten of neer te laten, touwwerk van de antennes of sprieten (2 pieces d oste), kaapstanders (2 caepstandes), katrollen (5 pollies chacun a deux polliettes), drie roeren en houtblokken om het schip op rollen te zetten of te stutten (10 grandes pieces de bois appellez vases, 40 pieces de bos dont les 24 gisent soubz la galeye). Ten slotte was daar ook nog een bootje met drie riemen (ung petit bootkin a tout 3 navirons).
De galei ontleende haar naam "la Gaillarde" waarschijnlijk aan haar achterkasteel of plecht voorzien van een tent tegen de zon, die kon vervangen of aangevuld worden door een andere

tent tegen de regen (1 double tente du chasteau gaillart).
De gebruikte termen zijn van oorsprong Frans (courtssies), Nederlands (hobancx), Portugees (proyse) of Italiaans (trosse). Zie daarover het bekend woordenboek van Jal (oude of nieuwe uitgave).
The act is in French with a slight admixture of flemish, but in fact the nouns are in 3 languages: Flemish, ordinary nautical French and galley-French which coincides with the Italian, Spanish and Portuguese galley-language, which seems to represent an earlier phase of Mediterranean sea-language, before the influx of Dutch (ultimately Scandinavian) terms. There seems to be a conflict between the latter 2 languages at least once.
The act might be translated as follows. In the name of God amen. Let all those that will hear or see these present letters or charters divided through ABCD, that on the penultimate day of the month of September in the year 1450, master Jehan Bouta, master-carpenter of my much redoubted Lord, Mylord the Duke of Burgundy, of Lorraine, of Brabant and Limburg, Count of Flanders etc, left and delivered to Guillaume Dierijcx, portmaster of the town of Dunkirk, in the name of the same town, the galley of my said Lord the Duke, named *La Gaillarde*, together with the goods and gear of same, and the said portmaster received them in name as above and in the manner following, first the hull of the same galley with in all seventy-seven iron chains, nailed along the "coursie" (galley-term), forty on one side and thirthy-seven on the other, without the said town having been willing to take charge of her beyond keeping her dry and covered. Item the parcels and goods named hereafter, which the said town has had put in safe keeping at the request of the said master Jehan. It is viz. three rudders, three masts, three pieces of yards, two sails, one lateen and one square, an old foresail, one double tent for the quarterdeck, three dredges with four flukes (galley-term), an anchor, one cable and a rope, four blocks with all their straps and seizings, two small ropes to pull the mast, one small rope for the foremast, a rope of three pieces, five blocks with two sheaves each, a large piece of iron, three ropes, ten shrouds for the mast, the shrouds for the mizzen aft, three new blocks, a rope, eleven blocks, a large block with two sheaves, the parrell-truss (galley-term) of the main mast, the parrell-truss of the mizzen (Flemish), thirteen small blocks, two small ropes, twenty-one oars weighted with lead, seven oars without lead, two capstans (Flemish) two runners for a tackle to raise the mast (galley-term), a mooringline (galley-term), two pieces of vang (galley-term), ten large pieces of wood called bilgeways (galley-term), forty pieces of wood of which twenty-four lie under the galley and the other sixteen are in the townhall and a little boat (Flemish) with in all three oars. Witness the manual sign of me, Walerand Albeel, clerk of the said town of Dunkirk, put here at the request of the said portmaster as well as of the said master Jehan Bouta in the year and day mentioned above. (Indenture) ABCD. (Signed) Albeel W. (Nouns which haven no language marked in brackets added, are originally in sailing-French).
The list seems rather haphazard, and if we add things up, imcomplete. It is possible that Jehan Bouta did not deliver a fully equipped ship, but a ship and a lot of oddments and wished to state emphatically that he could not be held liabe for more. Perhaps the refusal of the town to do more for the hull of the ship than keep it dry and covered, indicates that the attitude towards pilfering was one of resignment.
The galley apparently had three masts, which was common in the 15th century, as the woodcuts to Breydenbachs book and the drawing in the cottonain manuscript in the British Museum show. In the 16th and 17th century two was the rule, but in the 18th Jean Marteilhe, who probably rowed in a galley based on Dunkirk from 1702 to 1713, could write: "on inventa de mon temps un petit mât d'artimon". In the Naval Museum at Genova-Pegli and in the Orlog museet at Copenhagen we can see models of 18th-century, three-masted galleys. The one at Copenhagen was brought from Malta in 1738. "Mât d'artimon" is sailing - French for mizzen-mast, while "mât de mizaine" means foremast. It seems that Albeel wrote "mizaine derrière" for the benefit of those hesitating between French and Flemish. Further on he uses the word "bazane". "Bezaan" is "mizzen" in Dutch and Flemish to the present day, though Witsen, in his chapter on galleys, calls a galley's foremast the "bezaamsmast". To add to the confusion, in some places and periods one of the sails used on a galley's main mast is called "mizaine" (N. Fourguin, p. 254).
For the three masts there were three sails, by Mr. Degryse's interpretation. It is, however, possible, that there were only two and that "ung vieux boursset" is the definition of the square sail. Crescentio said in his chapter about galleys, that square foresails were "quasi fuor di uso" (alsmost out of use). Moreover, to the last galleys had a small square stormsail for the

foremast called "tréou" or "treo". Galleys had different sails for each mast for different kinds of weather, so three sails were probably not sufficient for a three-masted galley in 1450.
It may be asked whether three "pieces de verges" means three yards or indeed pieces, espcialy as a lateen yard was made of two pieces, called the "quart" and the "penne", woolded together. In the latter case there is only a yard and a half.
As to the standing and running rigging, the shrouds of the foremast are conspicuously absent. Some of the ropes mentioned are part of a tackle ("vettes, oste", both galley-terms) but the rest of the tackle is not mentioned, unless we must find it among the eleven unspecified ropes and thirty-seven blocks. Though we do not know all the details of 15th-century rigging, the number of blocks and ropes seems insufficient. Lacking too is the truss for the foremast.
The author must confess himself baffled by "deux petiz cordailles pour tirer le mast".
Unless it was the practice to steer a small boat with an oar, a "bootkin" with three oars is incomplete.
The three rudders mentioned were possibly just what the galley was supposed to have. The "Trattato del fabbricar navigli", a manuscript in the National Library at Florence, which probably dates from the 15th century, tells us that a galley then had the two traditional Mediterranean steering-oars, called "timoni latini", and between them the new stem-rudder, called "timone bavonesco", a term as yet unexplained. As galley-building in northerm Europe always took its cues from the Meditarranean, it is quite possible that the *Gaillarde* had the same arrangement. The word "courttsies" in this document is the chief evidence that we have to deal with a galley proper, Mediterranean style. It is generally written singular "coursie". It represents two walls of "thick stuff" of oak running about three feet apart down the middle of the deck from quarterdeck to fo 'c' sle. The "bow-chaser" recoiled between them down to the mainmast and planks laid transversely across the tops made a walk between the benches and oars. Now for the seventy-seven chains and twenty-eight oars. Degryse thinks of nine benches of three rowers and five with two on one side and twelve with three and three with two on the other. This looks untidy, and galleys were often untidy, especially after battles, but when everything was ship shape, things were more orderly, though lopsidedness came in. The inequality ot the number of chains on the port- and starboardside may be proof that the number of chains was complete. It was the custom that a galley had its "fougon" (galley), a clay-lined firebox over which pots could be hung from a kind of small gallows. This was put on top of one of the benches aft of the mainmast, generally on the port side. So one bench was generally not in use. Until far into the 16th century three was the usual number of rowers to a bench (a boon to the many writers in Latin). Now neither forty nor thirty-seven can be divided by three, but we have a rather mysterious remark by Padre Oliveira: "diminuindo sempre os ultimos bancos de um homem de cada banco porque assy o require o angostar da proa". One cannot see what the narrowing of the prow matters because all the benches were fitted in a rectangular frame that forward also had to support cannon. This was printed in 1555, in 1622 Hobier described a galley of five a bench and said that the benches forward of the mainmast held only four. In later sources there is no indication of this practice. In *La Gaillarde* we might imagine fourteen benches of three on each side, with two on the two foremost ones, and the "fougon" in place. But there is something else. In 1450 it was almost a century before galleys' "a sensile" (One man, one oar) gradually began to be superseded by galleys "a scaloccio" (several men pulling a sweep) (Fincati). So the full complement of oars for La Gaillarde was to be seventy-seven, eighty when the fougon was not in place. It may be significant that some of the oars are weighted with lead. As the rowers were seated at different distances from their tholes, adjustments had to be made in the weight of the looms. The presence of twenty-eight oars suggests that the galley had been rowed to its latest berth by a skeleton crew using the tholes available and the oars that came to hand.
It should be remarked that a galley of fourteen benches is rather short, the average galleys "a sensile" had twenty-four according to Fincati, but there always were variations and it is rather improbable that someone had been pilfering symmetrically. The possibility, that some benches were reserved for unchained "bonavoglie" (free rowers), should not be excluded.

III. The red and the black: technical data on galleys from government papers

The first technical description of a galley we have left in Dutch in part of a resolution of the States of Holland and West Vriesland (sic), dated January the 6th 1598. It is very sketchy. The Gentlemen States have seen a "patroon" (pattern) of a Spanish galley and want one built on the same lines. She was to be low on the water, her length was to be 70 feet, her beam 16 feet. She was to have twelve oars on each side, every oar to be handled by two man. She had to have a "suitable cabin". Dammas Leenderts was to build her at Vlaardingen. Later resolutions gave more details and A. Bijl rightly notes several inconsistencies. In a list of expenses for the galley fixed in the resolution of July the 8th 1598 (Bijl, p. 181) seventy-two men are counted beside the specified crew and that would be just the number needed to have three men to each oar. He also noticed that according a resolution of January the 18th 1601 for the Vlaardingen galley oars were ordered 42 feet long. This is inprobable for a ship 70 feet long. (Bijl, p. 185).
Jean-Antoine Barras de la Penne (d. 1750), galley captain, "chef d'excadre", "commandant du port" and "inspecteur des constructions navales" at Marseilles, a Provencal nobleman like most his colleagues, wrote several treatises on galleys, containing much propaganda but more information. They have not been published, but there are at least two sets of manuscript extant, one in the Bibliothèque Nationale and one at the Centre d'études du Musée de la Marine, both in Paris. In his "Description abrégée d'une galère moderne" he gave a formula for calculating the size and proportions of a galley from the "interscalme" (distance between two tholes) and the number of oars on one side. The first multiplied by the second gives the "longueur de vogue" (rowing-length). Dividing this by 4 gives the "largeur de vogue" (rowing-width) which is not the beam but the width of the rectangular rowing-frame ("talar") laid over the hull; 1/8 of the "longueur de vogue" was the length of the deck ("tambouret") forward of the "joug de proue" (prow-yoke; support and short forward side of the "talar") to the stempost; 1/10 was the length of the "conille", which was the room between the last rowing benches and the "joug de proue", where there were two platforms for guns on either side of the "coursie" (about which more anon), and over which was the raised fighting-platform (called "rambade" or correctly "rambades" because there was a separate platform on each side of the coursie); 1/15 was the lenght of the espale, a platform between the first (one started counting aft in galleys) rowing bench and the "joug de poupe" (poop yoke), support and short side of the "talar" aft) and 1/7 the length of the poop-deck behind the "joug de poupe". It should be noticed that Barras interspersed his enumeration with many remarks like "a little less than", "roughly" or "this has been fixed at". But by trying out on non-fanciful representations of galleys, one will generally find that the formula fits.
If we apply it to the Vlaardingen galley, our first question is: what was the "interscalme"? We have no direct information, but we have te concept for the galleys projected in the resolution of December the 7th 1600. Here the distance between benches plus the width of a bench is 4 feet. In the "a scaloccio" systeem (one bench, one oar) this is of course the same as the "interscalme". In the Netherlands several foot measures were current (Van Swinden, 1812), divided in to 10, 11 or 12 inches. The States prescribed feet of 11 inches. The 11 inch foot most used was the Amsterdam one, which is generally presented as 0.283 m. But in Van Swinden's book (p. 26) one can see that already in his day the exact length was not known in all its decimals. If we assume this footmeasure was used, we get an "interscalme" of ca. 1.132 m. In Barras de la Penne's time the standard French foot was the "pied de roi", long 0.324 m. subdivided into 12 "pouces" (inches) and 144 "lignes" (lines). His "interscalme" is 3 feet, 10 inches and 3 lines, which makes 1.244 m, so French galley-slaves had about 10 cm more leg-room. He says quite reasonably that this distance was based on the average length of man, but averageness is a notoriously debatable factor. In 1744 a Danish naval officer named Eskildsen in Sweden inspected some Russian galleys the Swedes had captured and wrote a report, now in Rigsarkivet (the Public Record Office) at Copenhagen, on what the Swedes allowed him to see. He wondered that the Russian "interscalme" was only 3-3 1/4 feet. The Danish foot was 0.314 m. in the 18th century (Martini, 1883).
Whatever foot was meant in the 1600 concept, it is reasonnable to suppose that the 4 feet "interscalme" was used in other galleys as well. This gives a "longueur de vogue" of 48 feet. Here were are scotched. The çommon Mediterranean had twenty-six oars a side, but it is clear that when the number of oars decreases the "largeur de vogue" dwindles into impracti-

cability if we stick to the 1/4 proportion. Here it would be 12 feet, and the beam is 16 feet.
As to the rest, reducing the results to round numbers in true Barras style, we get 69 feet, which is quite near the prescribed 70. We do not know exactly how this lenght was divided. The "conille" was working-space. Room was needed for guns and gunners, ropes and latrines; was the length of roughly 1 1/2 m the formule allowed, sufficient? The same goes for the "espale", where guns were placed if any guns were carried aft, but this was not always so. We do not know what was the full armament of the red galley. In the resolution of June the 28th 1599 we read that the captain, Bartheleus van Buren, had asked for six "steenstukskens", which litterally means: "small stone-pieces". In French these were called "pierriers" and in Spanish "pedreros". As the name indicates they were originally designed to fire stone projectiles. They existed in all sizes (Guilmartin, pp. 166-171). Van Buren also asked for two "metalen stukskens" (small cast-bronze pieces) more. On the 18th of January 1601 the same Van Buren is seen to have declared to have only two "pierriers" except three "voorstukken" (forward pieces). He is promised four suitable "pierriers" weighing 500 lb. the two, with double chambers, and two bronze "pierriers". The former ones were probably cast- (Guilmartin, p. 175) but possibly still wrought iron (Guilmartin, p. 159). There are no indications as to the distribution of these guns. He mentions his forward pieces as separate from the "pierriers", and the "pierriers" of which the weight is stated, are very light as guns go, so it is probable that they were the light swivel-guns mounted between the oars (Guilmartin, p. 162). We know that seven guns forward on galleys were not unusual (Guilmartin, p. 300), it is possible that the two "pierriers" of unstated weight went forward. As there were still two pierriers left and Van Buren had fornernly asked for six "pierriers" it is quite probably that the Red Galley carried five forward guns and six "pierriers" along the "apostis". We are not informed about the size of the gun carriages, which on galleys did not have wheels. So we do not know how wide the "conille" should be to contain them. The width of the "conille" was that of the inside of the rowing-frame. This again is connected with the lenght of the oars. In the resolution we are still discussing Van Buren in promised two hundred oars, 42 feet long. Bijl rightly remarked that this was an excessive lenght in a ship 70 feet long. (Bijl, p. 185, n. 4). His suggestion is to substitute the lenght of 22 feet. Which was that of oars ordered on May the 11th, 1600 for the large galley of Dordrecht (about which more anon). Before accepting this possibility one should realize that numbers in the publication of the resolutions do not seem reliable; the 22 feet oars had been ordered, because those present at Dordrecht were to short, while in the resolution of April the 5th 1600 it had been said that oars 40 feet long were needed for the same galley. We cannot find out whether this confusion was the printer's, the secretary's or that of the parties actually engaged in these transactions.
The loom of a galley oar was a little under 1/3 of the length of the whole oar. Barras de la Penne's proportions were: 11 1/2 feet inside and 25 outside. The loom had to reach from tholes which were fixed in the long side of the rowing-frame called the "apostis", which functioned as an outrigger, to the side of the "coursie", where the first rower sat. This "coursie" consisted of two "walls" of thick wood running fore- and aft along the centerline of the convex deck from "joug de poupe" to "joug de proue". It had several functions: longitudinal strenghthening of the ship, storeroom for sails and spars aft of the mainmast, which stood in it (the formast stood beside it, generally on the port side), forward; a "tunnel" for the bow-chaser to recoil into and, being covered by transverse planks, a gangway between poop and fore deck ("tambouret"). In the galley-concept in the resolution of December the 7th, 1600 the width of the "coursie" (at the outside) was 4 feet and 3 feet three inches within. So, if the foot was 0.283 m, 1.132 m. It had to contain a half curtow, which was a 24-pounder (according to, a.o. the resolution of July the 16th, 1601), and its wheelless carriage. We cannot say much about these proportions, where we see that Hobier (Hobier, p. 27) makes a coursie 2 1/2 pans (a pan is 9 French inches) contain a gun firing a ball of 33-34 "poids de Roy", according to the Grande Larouse the same as "un livre poids de marc", which in Martini's Manuale (1883) is 0.48 kilogramme, while an Amsterdam pound was 0.49, but variation was always possible. Hobier's galleys were large ones of twenty-six oars a side, 130 feet 6 inches long. The galleys of the 1600 program were 120 feet long and had a beam of 20 feet. So we can expert the red galley to have a smaller bowchaser, but to have oars of 22 feet she probably needed a "coursie" 4 feet wide. In that case the main beam stuck out 6 feet on either side. If the apostis was one foot further from the coursie, the 7 feet were just right for the loom. The red galley had three rowers to a bench. They must have needed a bench 4 1/4 feet long. Barras de la Penne makes the bench for 5 only 7 feet long. As the benches slanted

slightly forward there was a little over 3 feet left between bench and "apostis" in the Vlaardingen galley and 4 1/2 longer feet in the French galleys, but as in the former there would be 15 feet outside and in the latter 25, the leverage was about the same. We have it from both ends of the galley-hierarchy, from captain Barras de la Penne to ex-forçat Jean Marteilhe (Marteilhe, p. 165) that the last man on the bench had little to do by galley-standards, though we should not forget that Barras wrote about five men to a bench and Marteilhe was one of six. On the whole we must say, that though an apostis sticking out only 1 foot at the main beam in narrow, it seems to fit a short ship, which by galley-standard, the red galley was; 1:8 is a common proportion and she was not yet 1:5.
The resolution of August 31st and September the 1st 1601 shows that Van Buren had discarded his "suitable cabin". A cabin, whatever the standards of suitability, was an anomaly in a galley. Commonly, the only cabin worthy of the name was aft an belowdecks. The inexhaustible Barras de la Penne tells us that many a galley of his day was built with too high a poop because her captain wanted a cabin he could stand up in. Van Buren had also demolished his "compagne", which in this context probably means the raised poopdeck, viz. the roof of the cabin. There are several instances of this use for a cabin in galleys. A galley-model in the Nationaal Scheepvaartmuseum at Antwerp, from Massalubrense near Naples, dated ca. 1700 (Communication from Mr. J. van Beylen), shows a low cabin on the poop, with on top the "arceaux" (hoops) which generally form the skeleton of the shelter on a galley's quarterdeck. A similar arrangement is seen on the model of a three-masted galley, probably 18th century, in the Museo Navale at Genova-Pegli, shows a similar arrangement. The "arceaux" are missing, but the rudder has two tillers, one on cabin- and one on roof-level. Perhaps this arrangement is also meant in the model of a galley in the Rijksmuseum at Amsterdam. The original of this model is supposed to have been built in the Netherlands for Czar Peter the Great, but except for the Russian eagle in the decoration we have no evidence of this earlier than 1858 (Obreen). The cabin has a flat roof, but without any arrangements for navigational use, and where ordinary galleys have a quarterdeck on the level of "coursie" and "espale", steps run down from the "coursie" to the cabin floor, on the level of the actual convex deck. The latter feature makes the ship look like a luxury-yacht.
From the same resolution we obtain more technical information. The demolished cabin made room for two more pairs of oars. This poses problems. With fourteen oars a side not only the Barras formula does not fit anymore; but things get very cramped forward and aft of the rowing-frame. Still, Van Buren's doing away with the cabin makes the impression of going back to normal. He may have done away with "espale" too, as the designer of the galley "Den Nye Køhenhavnske" did in 1696 (drawing in Rigsarkivet), but he left a long deck behind the "joug de poupe". We do not hear that Van Buren had the hull changed in any way so we must suppose that everything found its place. The benches were narrow, in Barras de la Penne's time 6 inches. Most men's legs, especially when not horizontal, will fit into 3 feet, even Amsterdam ones. Moreover the space between the benches also has to contain the swing of the loom. The loom of the oars of the 1600 galleys was 11 1/2 feet, if Bijl's conjecture was right the looms in the Red galley were only 7 feet so less room may have been needed to swing a sweep. He also wants eighty-two men at the oars, which is two short unless he applied the principle of Padre Oliveira (Oliveira) and had only two men on his foremost benches, and three too many if he had one benche in use for the "fougon" (galley). Now he has no cabin anymore, he wants tents for the poop and the two tents (one against the sun, one against the rain and cold) to put up over the rowers when lying still, have to be enlarged. He wants his pooptent painted, as Jakob Michielsz. Wip, captain of the Dordrecht galley had done. He also wants the leftover leather from the bigger Dordrecht galley, where it is being renewed, to cover his rowing benches. He wants a new "bezaan" and a "fok" (a "bezaan is a mizzen and a "fok" is a foresail). In the concept of December the 7th 1600 it is left to the discretion of the local authorities either to mizzen or square-rig their galleys. A mizzen being a lateen in the 16th and 17th century it is logical to assume that by mizzen the usual lateen rig for galleys was meant. So as in his day, two masts were the rule for galleys, Van Buren must have had a lateen on his mainmast. Moreover in some lists of sails for the mainmast, galleys having differently sized sails for different weather, includes a "misaine" (Fourquin). Crescentio, in his list of gear (p. 8), mentions a third mast, called a "mezana", and a sail called "mezana" for that mast. Hobier mentions the rare occurrence of a third mast aft, the sail of which he calls "mezanin" (p. 38). We may assume that mizzen was always an acceptable term for the lateen sail farthest aft. The confuse matters, "misaine" is foresail in sailing-

french, the galley-term being "trinquet", in italian "trinchetto", and Witsen (p. 210) calls the foremast of a galley "bezaansmast", though on page 212 he is seen to know the word "trinchetto". Crescentio also (p. 8) mentions a square "mezana", but says it is "quasi fuor di uso" (almost out of use).
We are not certain about the shape of the "fok". Johan Rem's print (in the Amsterdam Scheepvaartmuseum) of the battle off Sluis against Spinola in 1603, shows the Spanish galleys wholly lateen-rigged and the Dutch ones with square foresails, but as Rem was a contemporary but possibly not a eye witness, he may have done so just to distinguish the sides. Anyway, there was nothing specifically Dutch about square-rigged galleys. Crescentio says the same on page 8 about "trinchetti" as about "mezzane", and already Jal noticed that old Italian paintings frequently showed square rigged galleys (Jal I, p. 403, 404). All we have mentioned here, except the cabin, was common Mediterranean practice. But another thing was not: Van Buren wanted a mizzen "with its bonnets". A bonnet was a rectangular strip of canvas, that could be attached to the foot of a sail. We are lucky in that an almost contemporary bonnet for a mizzen has been preserved, viz. one belonging to the "Vasa" (Bergtsson). Mediterranean practice was and remained, that, except for one and sometimes two reefs (Olesa-Muñido, I, p. 64), galleys bent different sails in different weather. Here we perhaps see a more practical alternative.
Van Buren also asks for "werpdreggens" (throwing grappels), which Bijl thought were for boarding (Bijl, p. 187), but may be the Mediterranean galley-anchor with 4 flukes and no stock, called "fer" or "ferro".
Lastly for ropes, of which the present author has not been able to trace those named "kycken" and "gateling". "Zwichteling" may be "zwichting " (catharping). As we have seen, there was by this time another galley. She is first mentioned in a resolution of April the 5th 1600 as building in Dordrecht. The wood for her was that of six "samoreuses" (river-barges of which the exact nature is not known anymore). According to a resolution of the 16th of the same month Van Buren gave advice for her construction and was in the running for becoming her captain. She became known as the black-or great galley of Dordrecht, which made the red galley the small one. She was the only Dutch galley to attain and was celebrated in contemporary prose (Verhaghen, 1600) and song (Scheurleer, pp. 59-63) for her raid, under her captain Jacob Michielsz Wip, (November the 29th 1600) on Antwerp, where several enemy ships were captured. This galley has been inadequately described. A chronicler of Dordrecht, Matthijs Balen Jansz, (p 867) wrote that she was 46 or 48 "schreden" (paces) long. We do not know what pace he meant. Certainly not the Venetian "passo" which was 5 feet, a Venetian foot being 0.34 m (Martini). This being a double pace Balen's may reasonably have been about half of that. According to Balen she carried fifteen metal pieces, not counting many "pierriers". As we have seen metal pieces can be "pierriers", but here they probably are the forward pieces and perhaps some firing aft from the "espale", as distinguished form the "pierriers" between the oars. The number fifteen is high, but inspires confidence by being odd, and when we see the artillery Spaniards crammed on "conille" and "rambades" (Guilmartin, p. 299, 300. pl. 19) it is not impossible. In the resolution of the 5th of April it was stated with satisfaction that the new galley would be fit to carry much heavy artillery. It is also said that she was to have 19 oars a side, and this is useful information. Assuming an "interscalme" of 4 feet again, the Barras formula gives a lenght of 108 feet, which is plausible. As we said before, one resolution allotted her 22 feet oars. Now giving her a "coursie" 4 feet wide, she would have a "largeur de vogue" of 18 feet, which is even less than Barras indicates and would make the black galley a very slim ship indeed, especially in view of all those guns. The resolution of April the 5th 1600 wanted to make her oars 40 feet long, but this unlikely too, as the galleys of the 7th of December 1600 program, which were to be 120 feet long, had a space 11 1/2 feed wide between "coursie" and "apostis", would need oars of 36 1/2 feet (like Barras's but in different feet). Changing the "interscalme" of the black galley would not mend matters in either case. With a 4 feet "coursie", an 18 feet beam, a "largeur de vogue" of 23 feet and in consequence oars of about 32 feet long, she would be a plausible galley, but of course this is conjectural.
Another puzzle is how Wip manned the oars. Twice, in the resolutions of August the 17th and 19th 1600, it is said that he needed a hundred rowers. These could be accommodated by a variation of the system Hobier described (p. 54) viz. seventeen benches of five men aft, and nine benches of four men forward of the mainmast. Wip could have had twelve benches of three and seven of two. In this way the black galley was certainly undermanned, especially

when we compare her to the small galley with three men to each oar. The last information we get about one of these galleys is that Van Buren, according to the resolution of January the 17th 1603, was given sixty new oars and 200 pounds of lead to balance them. Barras de la Penne describes how this was done. Lead of the desired weight was made into a rectangular strip, a mortise of the same size was cut in the loom, the lead laid in it and fastened with nails.

References.

Albertis, E.A.d', Le construzioni navali al tempo di Cristoforo Colombo. Rome, 1893.
Alemán, M., Het leven van Gusman d'Alfarache. Amsterdam, 1669.
Allard, C., Algemeene en verbeterde Hollantsche scheepsbouw. Amsterdam, 1716.
Anderson, R.C., Oared fighting ships. London, 1962.
Balen Jansz., M., Beschrijving der stad Dordrecht. Dordrecht, 1677.
Barras de la Penne, J.A., La science des galères 1707-1727. Paris, Bibliothèque Nationale, m.f. 9176-9178.
Bengtsson, S., The sails of the "Wasa". International Journal of Nautical Archeology 4, 1977, 27-41.
Bennell, J.E.G., English oared vessels in the 16th century. The Mariner's Mirror 60, 1974, 9-27, 169-187.
Beylen, J. van, Schepen van de Nederlanden van de late middeleeuwen tot het einde van de 17e eeuw. Amsterdam, 1970.
Boomkamp, G., Alkmaar en deszelfs geschiedenis, uit de nagelaten papieren van Simon Erkelenberg en vele andere stukken en bescheiden. Rotterdam, 1747.
Bor, P.C., Nederlantsche oorlogen, beroerten en borgerlijcke oneenicheyden. Amsterdam, 1685.
Breydenback, B. von, Die heylighe bevarden tot dat heylighe grafft in Jherusalem. Utrecht, 1488.
Bijl, A., De Nederlandse convooidienst. The Hague, 1951.
Cervantes Saavedra, M. de, Den verstandigen vromen ridder Don Quichot de la Mancha. Vert. door L. van den Bosch. Dordrecht, 1657.
Cornette, H.H., Iconographie van Antwerpen. Antwerp, 1933.
Cottonian MS. Titus A 26. Londen British Museum Library.
Crescentio, B., Nautica Mediterranea. Rome, 1607.
Dassié, F., L'architecture Navale. Paris 1677.
Degryse, R., De admiraals en de eigen marine van de Bourgondische hertogen. Mededelingen van de Marine Academie van België 17, 1965, 139-225.
Eskildsen, Rapport om Russiske galejer taget af Svenskerne. 1744. Copenhagen, Public Record Office.
Fincati, L., Le triremi. Rome, 1881.
Fourquin, N., The signal code of the galleys of Malta. The Mariner's Mirror 61, 1975, 254.
Furttenbach, J., Architectura navalis. Ulm, 1629.
Groot, H. de, Annales et historiae de rebus belgicis. Amsterdam, 1657.
Groot, H. de, Nederlandsche jaerboeken en historieën. Amsterdam, 1681.
Guevara, A. de, Libro de los inventores del arte de marear y de muchos trabajos que se pasan en las galeras. 1539.
Guilmartin, J.F., Gunpowder and galleys. Cambridge, 1974.
Hallema, A., Vlaardingen en Dordrecht als oudste Nederlandse galeiendepôts. Tijdschrift voor geschiedenis 66, 1953, 69-94.
Hamaker, H.G., De rekeningen van de grafelijkheid van Holland onder het Henegouwsche Huis. Utrecht, 1878.
Hermannus, W., Hollandiae Gelriaeque bellum, in: A. Matthaeus, Analecta. 1738. I, 321-345.
History of the Russian fleet during the reign of Peter the Great, by a contemporary Englishman, 1724. Ed. by C.A.G. Bridge. London, 1899.
Hobier, I., De la construction d'une gallaire. Paris, 1622.
Holck, P., Kort Adeler. Copenhagen, 1934.
Hooft, P.C., Nederlandsche Historieën. Amsterdam, 1703.
Il manovriere di galera. Proporzioni del bastimento da un pilota di galera al servizio della Sacra Religione. MS, 1780. Rome, Bibliotheca Centrale del Ministerio della Marina.

Jal, A., Archéologie navale. Paris, 1840.
Jonge, J.C. de, Het Nederlandsche Zeewezen. Haarlem, 1858.
La Roncière, Ch. de, Histoire de la marine française. Paris, 1899-1932.
Marteilhe, J., Mémoires d'un protestant condamné aux galères de France pour cause de la réligion. Rotterdam, 1757.
Masson, P., Les galères de France. Annales de la Faculté des Lettres d'Aix (Aix-en-Provence) 20, 1973, 1 & 2.
Meteren, E. van, Belgische ofte Nederlandsche oorlogen en geschiedenissen. Amsterdam, 1653.
Obreen, J.M., Catalogus der verzameling van modellen van het departement van marine. The Hague, 1858.
Olesa-Muñido, F.F., La galera en la navegacion y el combate. Madrid, 1971.
Oliveira, F., O arte da guerra no mar. Coimbra, 1555.
Oudendijk, J.K., Een Bourgondisch ridder over de oorlog ter zee. Amsterdam, 1941.
Rawlinson, H.G., The Flanders galleys. The Mariner's Mirror 12, 1926, 145-168.
Resolutiën van de Heeren Staten van Holland en Westvriesland. Gedrukt 1772-1792.
Scheurleer, D.F., Van varen en vechten. Verzen van tijdgenooten op onze zeehelden en zeeslagen, lof- en schimpdichten, matrozenliederen. Deel I, 1572-1654. Den Haag, 1914.
Sello, G., Oldenburgs Seeschiffahrt in alter und neuer Zeit. Pfingstblätter des Hansischen Geschichtsvereins, 1906, Blatt II.
Stoke, M., Hollandsche jaerboeken of Rijmkroniek tot 1305. Leiden, 1699.
Svenska Flottans Historia. Malmö, 1943.
Swinden, J.H. van, Vergelijkingstafels tusschen de Hollandsche lengtematen en den mètre. Amsterdam, 1812.
Trattato del fabbricar navigli. (Also known as "La fabbrica di galere"). Anon. MS, Collegio Maglabecchiana, cl. XIX, cod. VII. National Library, Florence.
Velius, Th., Chronyck van Hoorn. Hoorn, 1617.
Verhagen, P., Waerachtig verhael van het Romeyns feit "twelk door die van de Swarte Galey van Dordrecht is aengericht voor de stad van Antwerpen". Delft, 1600.
Verwer, W.J., Memoriaelbouck. Ed. J.J. Temminck. Haarlem, 1973.
Witsen, N., Aeloude en hedendaegse scheepsbouw en bestier. Amsterdam, 1671.
IJk, C. van, De Nederlandsche scheepsbouwkonst opengesteld. Amsterdam, 1697.

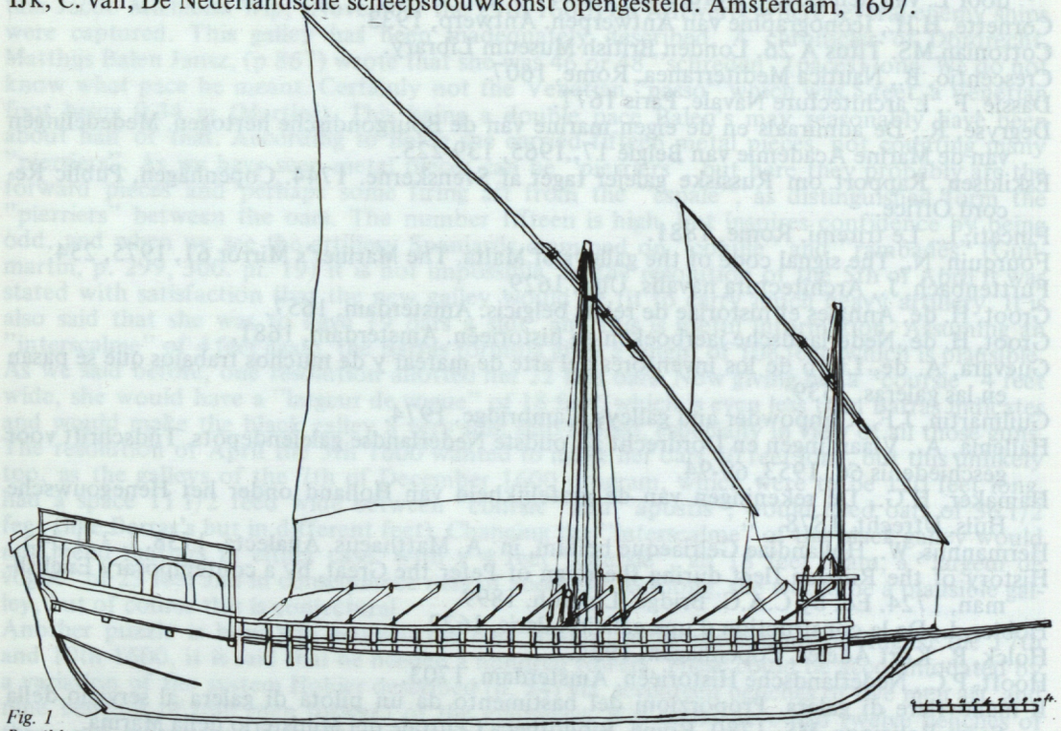


Fig. 1
Possible aspect of Vlaardingen galley. Starboard view. Drawn by the author. Interscalmium 3½ feet.

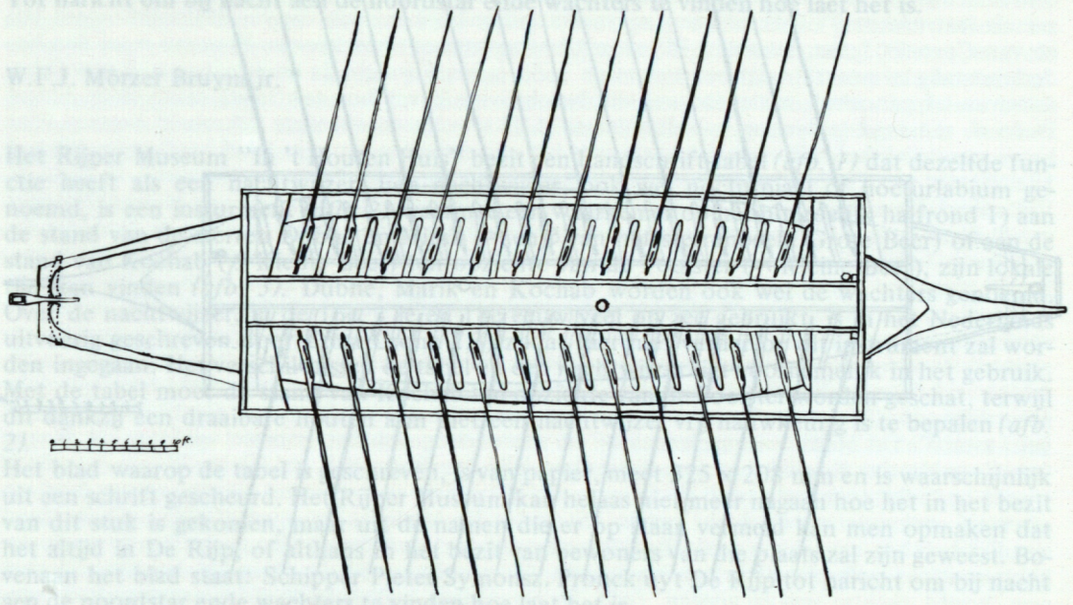


Fig. 2
Possible aspect of Vlaardingen galley. Seen from above. Drawn by the author.

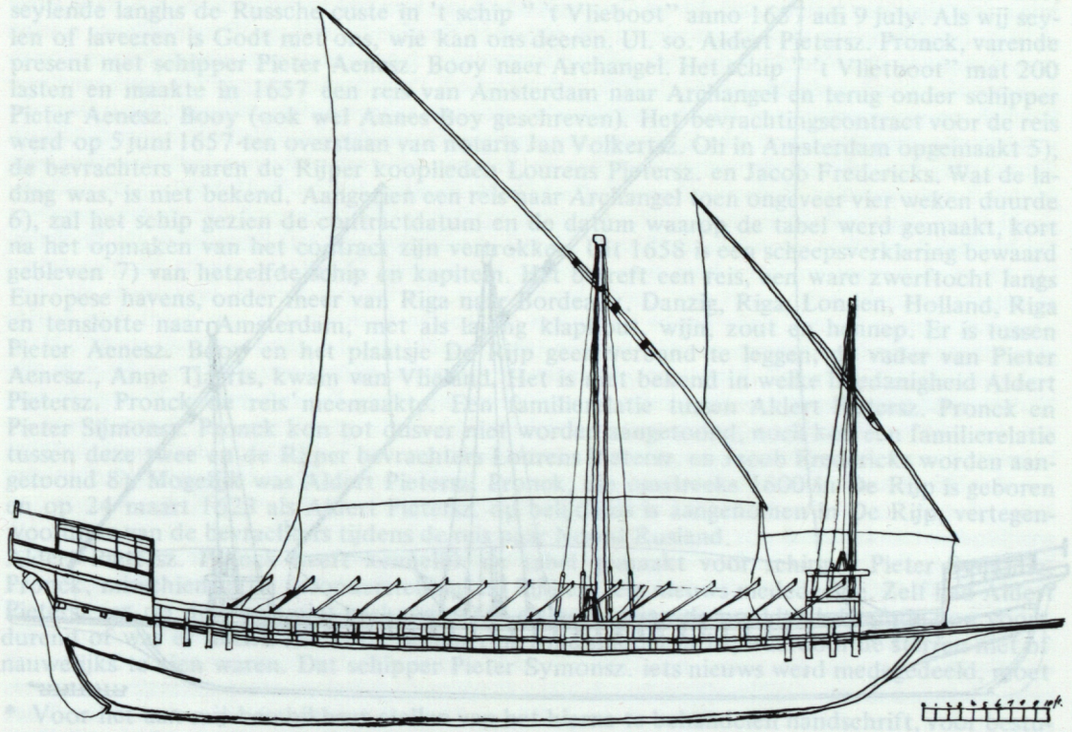


Fig. 3
Possible aspect of Vlaardingen galley after rebuilding. Starboard view. Drawn by the author.

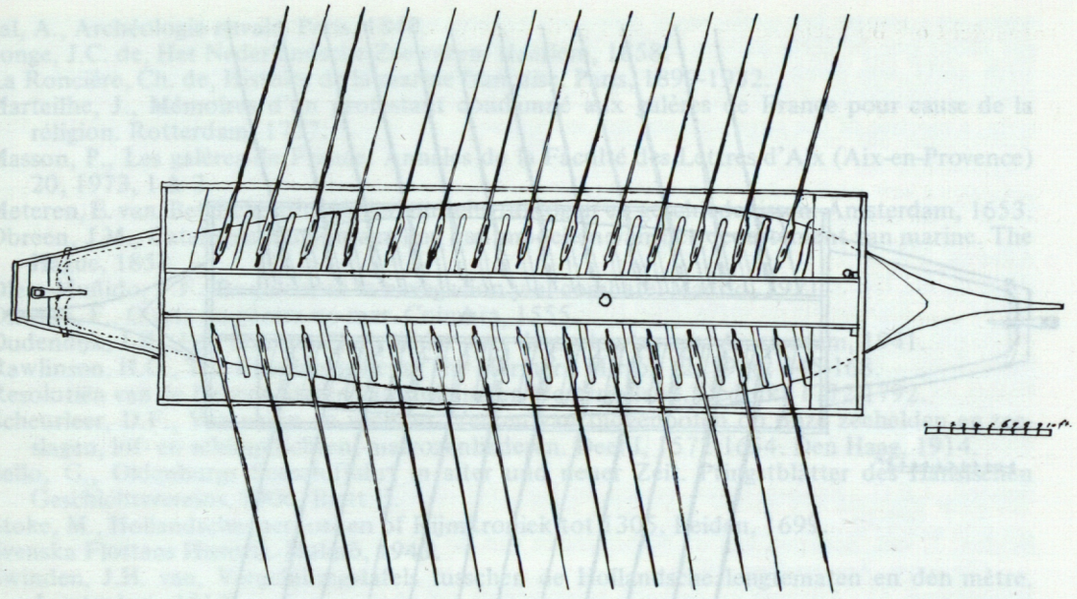


Fig. 4
Possible aspect of Vlaardingen galley after rebuilding. Seen from above. Drawn by the author.

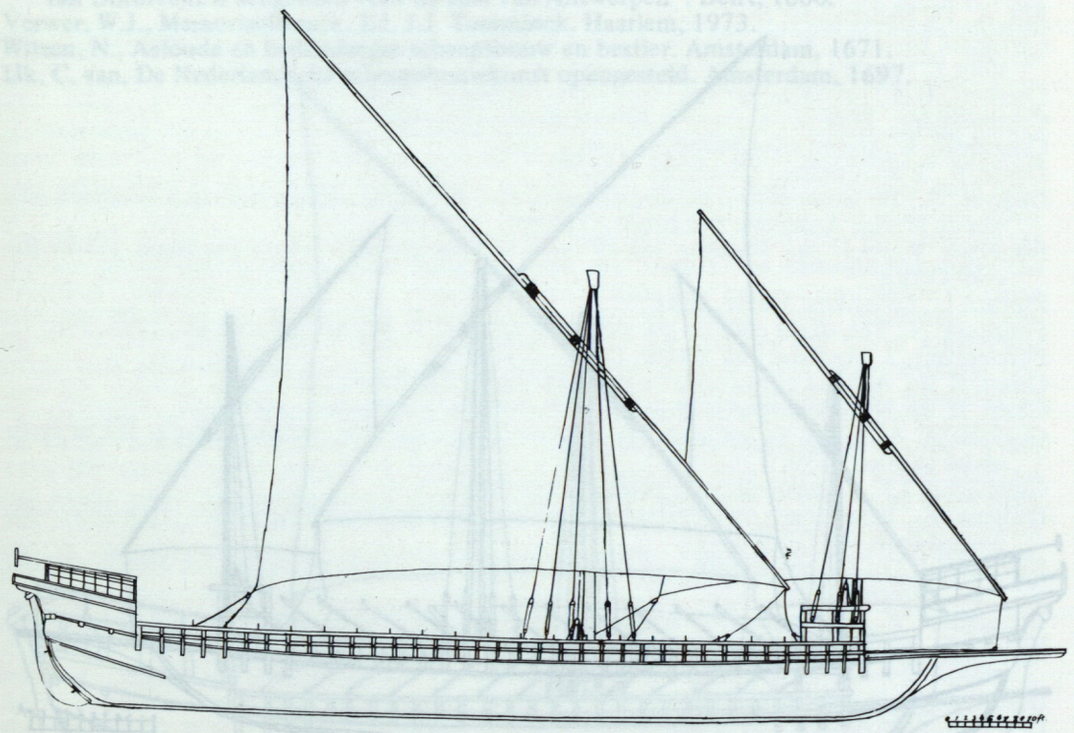


Fig. 5
Possible aspect of Dordrecht galley. Starboard view. Beam being unknown, view from above and oars omitted. Interscalmium 4 feet.

Tot naricht om bij nacht aen de noordstar ende wachters te vinden hoe laet het is.

W.F.J. Mörzer Bruyns jr. *

Het Rijper Museum "In 't Houten Huis" bezit een handschrift-tabel *(afb. 1)* dat dezelfde functie heeft als een nachtwijzer. Een nachtwijzer, ook wel nocturniaal of nocturlabium genoemd, is een insturment *(afb. 2)* waarmee een waarnemer op het noordelijk halfrond 1) aan de stand van de sterren Dubhe en Mirak (α en β van het sterrenbeeld Grote Beer) of aan de stand van Kochab (β Kleine Beer) ten opzichte van de Poolster (α Kleine Beer), zijn lokale tijd kan vinden *(afb. 3)*. Dubhe, Marik en Kochab worden ook wel de wachters genoemd. Over de nachtwijzer, in de 16e, 17e en 18e eeuw veel op zee gebruikt, is in het Nederlands uitvoerig geschreven door Ernst Crone 2,3) zodat hier niet verder op dit instrument zal worden ingegaan. Het verschil tussen de tabel en een nachtwijzer ligt voornamelijk in het gebruik. Met de tabel moet de stand van Kochab ten opzichte van de Poolster worden geschat, terwijl dit dankzij een draaibare houten arm met een nachtwijzer vrij nauwkeurig is te bepalen *(afb. 2)*.
Het blad waarop de tabel is geschreven, is van papier, meet 325 x 208 mm en is waarschijnlijk uit een schrift gescheurd. Het Rijper Museum kan helaas niet meer nagaan hoe het in het bezit van dit stuk is gekomen, maar uit de namen die er op staan vermeld kan men opmaken dat het altijd in De Rijp, of althans in het bezit van bewoners van die plaats zal zijn geweest. Bovenaan het blad staat: Schipper Pieter Symonsz. Pronck uyt De Rijp tot naricht om bij nacht aen de noordstar ende wachters te vinden hoe laet het is.
Pieter Sijmonsz. Pronck zal ongeveer 1610 te De Rijp zijn geboren, hij wordt als Pieter Sijmonsz. op 23 december 1633 aangenomen op belijdenis in de Gereformeerde kerk te De Rijp. Van 1666 tot 1673 treedt hij verschillende malen op als doop- en als huwelijksgetuige bij zijn kinderen in De Rijp 4). Op welke schepen hij heeft gevaren en in welk vaargebied is helaas niet bekend. Onderaan het blad is het volgende geschreven: Geschreven in de Witte Zee, seylende langhs de Russche custe in 't schip " 't Vlieboot" anno 1657 adi 9 july. Als wij seylen of laveeren is Godt met ons, wie kan ons deeren. Ul. so. Aldert Pietersz. Pronck, varende present met schipper Pieter Aenesz. Booy naer Archangel. Het schip " 't Vlietboot" mat 200 lasten en maakte in 1657 een reis van Amsterdam naar Archangel en terug onder schipper Pieter Aenesz. Booy (ook wel Annes Boy geschreven). Het bevrachtingscontract voor de reis werd op 5 juni 1657 ten overstaan van notaris Jan Volkertsz. Oli in Amsterdam opgemaakt 5), de bevrachters waren de Rijper kooplieden Lourens Pietersz. en Jacob Fredericks. Wat de lading was, is niet bekend. Aangezien een reis naar Archangel toen ongeveer vier weken duurde 6), zal het schip gezien de contractdatum en de datum waarop de tabel werd gemaakt, kort na het opmaken van het contract zijn vertrokken. Uit 1658 is een scheepsverklaring bewaard gebleven 7) van hetzelfde schip en kapitein. Het betreft een reis, een ware zwerftocht langs Europese havens, onder meer van Riga naar Bordeaux, Danzig, Riga, Londen, Holland, Riga en tenslotte naar Amsterdam, met als lading klaphout, wijn, zout en hennep. Er is tussen Pieter Aenesz. Booy en het plaatsje De Rijp geen verband te leggen, de vader van Pieter Aenesz., Anne Tjaerts, kwam van Vlieland. Het is niet bekend in welke hoedanigheid Aldert Pietersz. Pronck de reis meemaakte. Een familierelatie tussen Aldert Pietersz. Pronck en Pieter Sijmonsz. Pronck kon tot dusver niet worden aangetoond, noch kon een familierelatie tussen deze twee en de Rijper bevrachters Lourens Pietersz. en Jacob Fredericks worden aangetoond 8). Mogelijk was Aldert Pietersz. Pronck, die omstreeks 1600 in De Rijp is geboren en op 24 maart 1623 als Aldert Pietersz. op belijdenis is aangenomen in De Rijp, vertegenwoordiger van de bevrachters tijdens de reis naar Noord Rusland.
Aldert Pietersz. Pronck heeft kennelijk de tabel gemaakt voor schipper Pieter Symonsz. Pronck, misschien in de veronderstelling dat hij hem iets nieuws mededeelde. Zelf had Aldert Pietersz. er op deze reis niet veel aan, want als gevolg van de pooldag scheen de zon voortdurend of was er slechts een korte schemering rond middernacht, waardoor de sterren niet of nauwelijks te zien waren. Dat schipper Pieter Symonsz. iets nieuws werd medegedeeld, moet

* Voor het aan mij beschikbaar stellen van het hierna te behandelen handschrift, voor bestudering en fotografie, ben ik bestuur en conservatrice van het Rijper Museum "In 't Houten Huis" zeer erkentelijk.