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## Britain as a Contractor State: Warship contracts as cooperative works between the royal and private shipyards

#### Shoya Fugetsu<sup>1</sup>

#### Abstract

This paper examines Britain's development as a 'contractor state' through its reliance on private shipyards for naval shipbuilding during the turn of the eighteenth century. Contrary to previous studies that emphasised the Navy's reluctance towards outsourcing, the paper reveals that the Navy took a supportive stance, assisting contractors beyond contractual obligations. While private yards faced challenges like labour shortages and impressments, the Navy issued protection tickets and provided resources to ensure timely project completion. Employing the letters of the contractors and other navy records, especially ones relating to the Johnson family's contracts, the study demonstrates how cooperation, rather than competition, enabled Britain's rapid expansion of naval capacity. The analysis underscores the Navy's commitment to private contractors, contributing to a symbiotic relationship that bolstered Britain's maritime power and economic growth. The findings illustrate the essential role of state intervention in private industry, especially under the pressures of wartime demands.

#### Keywords

Britain; shipbuilding; contract; state and industry; early modern history

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#### 1. Introduction

This study argues for the importance of a mutually beneficial relationship between the English/British navy and private shipbuilders for the state's efforts in naval shipbuilding at the turn of the eighteenth century. Early modernists have paid much attention to the efficiency and effectiveness of the British state's mobilisation of private resources for its strategic end. The 'fiscal-military state' became one of the most dominant frameworks to explain Britain's military success in the eighteenth century (Brewer, 1989). John Brewer's fiscal-military state model emphasises the legitimised taxation and trusted national debts endorsed by Parliament as the source of efficient money gathering. Based on this debate, Roger Knight and Martine Wilcox shifted their focus to how the British state spent the gathered funds to obtain strategic resources from private hands (Knight & Wilcox, 2010). Knight and Wilcox coined the term 'contractor state' and argued that Britain's inquiry into a wide range of contractors allowed its state to mobilise strategic resources cheaply and flexibly. On the other hand, Britain's prime rivals, France and Spain, relied on a few influential contractors. In other words, Britain's contractor state utilised the market competition among various businessmen. The studies of the contractor state deepened scholarly understanding of how the states achieved their strategic goals, especially in Western Europe in the 'long eighteenth century' (from the end of the seventeenth to the beginning of the nineteenth century). However, more recent historians have begun to focus on the private interests of those who undertook the business with the state and depict them as 'military entrepreneurs' (Sánchez, 2016).

Against this historiographical development, the present study focuses on the British navy's outsourcing of shipbuilding to private yards (hereafter, 'warship contracts'). It targets warship contracts at the turn of the eighteenth century due to the following historical significance. First, while the state-owned dockyards, royal dockyards, built capital warships, most of the frigates were built at private yards through warship contracts. Frigates were smaller warships used for trade protection and destruction, and they played a crucial role in Britain's maritime control and, to a certain extent, its economic growth (Harding, 2012). Thus, against the traditionally emphasised capital warships, recent naval historians point to the importance of smaller warships. Therefore, warship contractors played an unignorable part in Britain's naval shipbuilding efforts. Secondly, another historical significance lies in this study's time frame, the turn of the eighteenth century. Until the 1670s, warship contracts were largely contained by a few influential families, even in England. However, the end of the seventeenth century saw the skyrocketing demand for warships with open war with France, and the Navy handed the contracts to various families of broader regions. This became the foundation of the Navy's

practice of warship contracts throughout the Second Hundred Years War (1689-1815). Therefore, warship contracts at the turn of the century provide an excellent case study of Britain's emergence as a contractor state.

Against this background, the present paper questions what allowed the rapid expansion of warship contracts at the turn of the eighteenth century. To properly assess this question, it is necessary to reveal how private shipbuilders built rated warships successfully.<sup>2</sup> Answering this question requires a closer observation of the interactions between the Navy and private shipbuilders during their contracts. Historians were not completely silent about the interactions between the two parties.<sup>3</sup> Naval historians up to the 1970s reconstructed how the Board relied on private actors to achieve its strategic goals. For example, A. J. Holland's study revealed the business nature of Hampshire contractors and their relationship with the Navy (Holland, 1971). Nevertheless, besides these few exceptions, scholarly understanding of how warship contractors conducted their naval shipbuilding is fairly limited. Since the main subject has been the administration of the naval department, warship contractors have been on the flip side of the picture.

The lack of insights into naval shipbuilding at private yards also limits the scholarly understanding of the Navy's attitude towards the contracts. Earlier studies emphasised the Navy's negative assessment of outsourcing shipbuilding to private yards. They recognised that the Navy's criticisms can be categorised into two: the quality concerns of contracted warships and the worry over friction between the royal and private yards for labour and resource procurements (Holland, 1971, pp. 12-13). For example, Bernard Pool's early work already stressed the Navy's concern that private shipbuilders were only thinking about their profits and did not offer a quality that justifies the price (Pool, 1966, pp. 49, 61). Pool further stressed the low quality of private-built warships by highlighting Edmund Dummer's criticisms of 'a very dangerous custom is the building of ships by contract' and that private build warships would be 'worn out in less than half the time of those built in the King's Yards.'

Nevertheless, one should be cautious with the assessment that the Navy was reluctant to outsource shipbuilding. Most importantly, the Navy Board's aversion to warship contracts was concentrated on those for capital ships. In the Board's letter to the Admiralty in March 1708, it

 <sup>&</sup>lt;sup>2</sup> The British navy classified its warships by the number of cannons the vessels carried. First Rates were the biggest and the Sixth Rates were the smallest among rated warships.
 <sup>3</sup> The Navy Board was a naval department responsible for constructing and managing

<sup>&</sup>quot; The Navy Board was a naval department responsible for constructing and managing warships.

wrote:

That it has always been our humble opinion that the building, rebuilding, and repairing of her Majesty's ships in merchants' yards should be avoided as much as possible, and especially such important works as the capital ships; and that when there shall be a necessity to perform any works in the merchants' yards those of the least, and not of the greatest, importance should be put into their hands. (Merriman (Ed.), 1961, p. 82) More strikingly, the Board officers stated in a letter of January 1711 that 'All the merchants' yards in the River [Thames] are qualified for building such small ships', the Fifth and Sixth Rates (Merriman (Ed.), 1961, p. 92). It might be true that the Navy wanted to contain naval shipbuilding at the royal yards as much as possible. However, considering the high volume of shipbuilding during wartime, the Board also saw outsourcing to private yards as an effective way to rapidly expand its shipbuilding capacity.

Alongside the assessment of navy officers' concern over the quality of contracted warships, studies on the royal dockyard management implied that warship contracts undermined the royal dockyards' activity. J. M. Haas hinted that warship contracts had negative impacts on the royal yards as private ones offered higher wages and took workers from the Navy, for example (Haas, 1994). Indeed, the Navy Board wrote about the possibility of increasing competition between the two yards for timber by outsourcing the rebuilding of the capital ships to private hands in March 1708 (Merriman (Ed.), 1961, pp. 82-83).

However, it is important to note that the required timber might differ according to the subject ship's size. James Dodds and James Moore argued that warships and merchantmen required different sizes and types of timber to be built (Dodds & Moore, 1995, p. 17). Holland also noted that warship contracts required larger timber than mercantile shipbuilding both in size and amount, thus demanding connections to different sorts of timber suppliers (Holland, 1971, pp. 46-47). In a similar way, timber used for capital ships and frigates might be different. If this was the case, the two yards did not necessarily compete for resource procurements as First and Second Rates were contained at the royal yards, except for some rebuilding at Blackwall Yard. Or this very nature of different requirements might be why such a division of labour emerged between the two yards in the first place. In addition, Ann Coats argued that, given the shortage of timber and labour, outsourcing to the private sector was a reasonable way of reducing friction between the two yards and creating a local pool of skilled labour (Coats, 2006, p. 421). Collectively, it is inaccurate to conclude that warship contracts always created competition for resource procurement, thus hindering the business of the royal yards.

Competitions for resources might have happened for Third to Sixth Rates. However, without the collaboration of private yards, the Navy could not catch up with the skyrocketing demand in the first place. Judging how the royal yards regarded naval shipbuilding at private yards awaits a closer look at how the two yards interacted with each other during warship contracts.

In summary, owing to the different sets of questions, the existing accounts drew the story from the navy officers' perspectives, and what the Navy's attitude towards private yards meant to warship contractors was largely overlooked. Thus, the scholarly understanding of the Navy Board's criticisms against warship contracts requires a proper reassessment to relocate warship contracts in the new perspective of the contractor state debate and the reinterpretation from military entrepreneurs' perspectives. In other words, this paper analyses warship contractors' interactions with the Navy during naval shipbuilding through the lens of cooperation rather than competition between the two yards.

Against this background, this paper examines how private yards conducted naval shipbuilding and what actions the Navy took for and against the contractors. Due to the lack of in-house records of private yards, it attempts to reconstruct their interactions, mainly with the correspondence between the Navy and warship contractors preserved in the navy records. Before analysing the interactions, the paper first examines the agreements on a signed contract to clarify the responsibilities of the two contracting parties. Then, it next focuses on warship contracts of the Johnson family of Blackwall, who provided the largest number and tonnage of warships at the turn of the eighteenth century. The number of available records is also why this study gives special weight to the family. In addition to the *Johnson Papers* at the British Library, the Navy kept strict weekly progress reports of warship contracts during the 1690s, which covers the period of Henry Johnson's (life: 1661-1719) contracts well. These records combined allow us to reconstruct what kind of impact the Navy had on Blackwall Yard's warship contracts. The abundant records relating to the Johnsons can provide a great image of what were the difficulties the leading contractors faced and how they overcame them, if they did.

Collectively, this paper attempts to reconstruct the exact image of the Navy's attitude towards warship contracts. Presenting the conclusion first, the present study argues for the Board's rather supportive attitude towards warship contractors. Contrary to the traditional image of the Navy's reluctance to warship contracts, it assisted naval shipbuilding at private yards to a great extent. What was the most negatively influential was not the Board's reluctance but rather its lack of authority to secure flawless warship contracts despite its efforts.

### 2. Written Agreements & Warship Contractors' Responsibilities

In analysing the relationship and interactions between the Navy and warship contractors, it is first necessary to review their agreement when signing a contract. Some aspects of the agreements and practices of warship contracts have been revealed in existing studies. For example, it is known that contracts specify the price per tonnage, the date of delivery, and the method of payment in instalments (Banbury, 1971, p. 40; Pool, 1966, pp. 52, 63). Also, the Navy could reduce the final payment when the contractor failed to deliver the hull on time. However, as the existing studies of warship contracts mainly question the Navy Board's administration, they stress the aspects of the Navy's quality control. This paper instead reviews the agreements more widely, especially about the extent of the two parties' responsibilities.

Signed warship contracts at the turn of the eighteenth century are not compiled into a single series at archives, and they are scattered across the boxes, mainly of the 'ADM 106' series at the National Archives. Among these, 'ADM 106/3070' is labelled 'Contracts and certificates as to sick, wounded and dead' in the online catalogue.<sup>4</sup> Contrary to the misleading title, the box actually contains copies of warship contracts at the turn of the eighteenth century. First, this section examines Henry's contract for constructing a Fifth Rate fireship, later known as the *Strombolo*, on 31 October 1690 to clarify the scope of liabilities of both contracting parties.

The first part of the indenture gives an overview of the subject warship and agreements between Henry and the Navy Board:

...the said Sir Henry Johnson, His Executors Administrators and Assignees, shall and will finding all Materials and Workmanship, at his and their own proper Cost and Charges, Well and Workmanlike Erect and Build off the Stocks for the use of their Majesties' One New Frigate which he shall make a fireship, Building the same with all imaginable Regard to her good sailing By and Large... and entry finishing of the Hull or Body of the said fireship shall be as follow vizt:... (ADM 106/3070)<sup>5</sup>

<sup>&</sup>lt;sup>4</sup> 'The National Archives, Discovery',

<sup>&</sup>lt;https://discovery.nationalarchives.gov.uk/details/r/C4110946>, [accessed on 11 January 2024].

<sup>&</sup>lt;sup>5</sup> Henry Johnson's warship contract for the Fifth Rate *Strombolo*, 31 October 1690. The spellings are modernised by the author for the clarity.

This excerpt indicates that from procuring resources to completing the hull is Henry's responsibility. In particular, it clearly states that the shipbuilder was responsible for the costs of these items. It also clarifies that the vessel should be the frigate design, and the Navy would operate it as a fireship. As such, the Navy defined the dimensions and purpose of the subject ship precisely in advance.

After detailed dimensions of the ship and directions for the construction processes, including the raw materials' conditions, the second last paragraph of the contract specifies the procedure relating to the launch in detail:

...and to Launch and [the said (?, the document damaged)] Ship on float in the River of the Thames into Such of their Majesties' Officers and shall be appointed to receive her by or before the last of February next, or the first Spring March in furthest. And it is further Agreed if at any time During the Building of the said Ship herein mentioned according to the Dimensions, protection, Sheathings and Conditions before expressed or intended to be expressed, there shall be found on due Survey to be made thereon by Such as shall be there unto Appointed any mentioned Materials or in sufficient Workmanships prejudicial to their Majesties That then after due notice thereof given in writing by the said Surveyor or Surveyors to the said Sir Henry Johnson or Chief Master Workman under him there shall be effectual and Speedy reformation of every Such default in Stuff or Workmanship, and the said Amendment shall be Certified in writing by the said Surveyor to the Principal Officers and Commissioners of their Majesties' Navy. (ADM 106/3070)

As such, the contracting parties agreed that the hull would be held on the River Thames after its launch and that a designated naval officer would receive it at a specified time. This part also states that the Navy will survey the vessel's condition, aligning with the already-known practice of warship contracts. The contract also clarifies that Henry must make changes if any problems are found during the survey and that the surveyor must receive the Navy Board's approval for the changes.

In this way, the Navy implemented the means of quality control through a strict survey and imposed the warship contractor to amend any defects found against the agreed dimensions. When Henry complained about the frequent surveys, Richard Haddock (life: 1629-1715), Comptroller of the Navy, replied that the 'surveys were Reported to be necessary, so that there can have been no obstruction to her Works from thence' (Add MS 22183 191, 191). Haddock's response indicates that the survey was a way of the Navy's quality control for warship

contracts. And even works at Blackwall Yard, the largest private yard and the intimate connection since Henry's father's time (another Henry, hereafter, 'Henry snr'), was a subject of the Navy's concern for the quality.<sup>6</sup>

It is important to add that warship contractors' responsibility for fixing any defects could go over the period of the launch. The *Blackwall* and *Guernsey* were Henry's last warship constructions (ADM 106/497/250).<sup>7</sup> The Navy claimed that the two ships were leaky and required further caulking (ADM/A/1832/141; ADM 106/489/142; ADM 106/493/223).<sup>8</sup> In reaction to this, Henry requested the Thames shipwrights to survey his warships and wrote to the Navy Board under shipbuilders' witnesses, 'The shipwrights of the River have given Under their hands that they are serviceable for the said ships, And Sir Henry Johnson has promised that if they Prove Deficient in seven years he will make them good at his own proper cost and Charge' (Add MS 22183 227; ADM 106/490/97).<sup>9</sup> As such, the Navy made sure that private shipbuilders would be liable for the quality of their naval shipbuilding.

The last paragraph of the indenture describes the details relating to the price and payments. First, it specifies the price should be 'the sum of Seven pounds twelve shillings & six pence per Ton for every Ton the said fireship shall be in Burthen Computed by the Rule of Ship Wrights' Hall' (ADM 106/3070). The paragraph continues, 'according to the Admeasurement before agreed on and Expressed in this Contract and no allowance to be made for any over Measure Exceeding Two hundred fifty six Tuns in Burthen or any over Works the said Ship to be completely fitted in all respects as to her Hull by the Contractor' (ADM 106/3070). Some historians argued that warship contractors tended to build warships larger than the agreed dimensions to maximise their profits, thus stressing that the Board was unwilling to outsource naval construction (Fox, 1992, p. 283). However, or precisely for this reason, the Navy acted in advance and set the cap of the tonnage that counts for the final price. Thus, the agreement over the measuring method assured the Navy that they would receive a vessel at a reasonable price.

On the other hand, the contract also gives insurance to the shipbuilders. The paragraph then

<sup>&</sup>lt;sup>6</sup> Hobhouse, Hermione (ed.), 'Blackwall Yard: Development, to c.1819', *British History Online*, <a href="https://www.british-history.ac.uk/survey-london/vols43-4/pp553-565">https://www.british-history.ac.uk/survey-london/vols43-4/pp553-565</a>, [accessed on 1 November 2024].

<sup>&</sup>lt;sup>7</sup> Edward Alford to the Navy Board, 7 July 1696.

<sup>&</sup>lt;sup>8</sup> The Admiralty to the Navy Board, 15 July 1696. Deptford officers to the Navy Board, 1 April 1696. John Quallett to the Navy Board, 13 March 1696.

<sup>&</sup>lt;sup>9</sup> Shish, Norbrry, Graves, Rolph, Haydon's survey, 2 April 1696. Henry Johnson to the Navy Board, 7 April 1696. The direct quote from ADM 106/490/97.

clarifies that the Navy would pay Henry in instalments and notes the timing of the payments and amounts for each occasion. It was agreed that the first instalment would be paid at the signing of the contract, followed by payments at each designated stage of the construction, and finally the remaining amount at the time of delivery, for a total of five instalments. The contract also states:

...and in case any of them shall happen to be unpaid the said Sir Henry Johnson is to be allowed Interest after the rate of Six pounds per Comptroller Annum from & after the said Six Months until his Money shall be paid him In Witness Whereof the said Principal Officers and Commissioners on their Majesties' behalf... (ADM 106/3070) Thus, in addition to that the contract included the means to assure the Navy of the quality of

the contracted warship, it also guaranteed compensation in case of the Navy's late payment to the contractor. As such, the two parties agreed on all aspects, from the construction details to the payment method to avoid any trouble over the contract.

Examining the agreements on the indenture allowed us to review that a signed contract precisely defines the scope of liabilities of the Navy and a warship contractor. Yet, other contracts need proper care to underline the generality of the shipbuilders' responsibilities. In fact, the Navy had a fixed structure of indentures even though all contracts were written by hand. For example, Thomas Ellis' contract for building a Six Rate states:

...the said Thomas Ellis – his Executors, Administrators, Servants and Assignees shall and will at their own proper Costs and Charges well and Workmanlike Erect and Build at his Yard at Shoreham in the County of Sussex – for the use of their Majesties' One good and Substantial New ship or Friggott of the Sixth Rate and wrought with good and well seasoned Timber and Plank of English oak and Elm... (ADM 106/3070)<sup>10</sup>

The section is almost identical to the one in Henry's contract for the *Strombolo*. John Winter's contract for building the Third Rate *Norfolk* can also read, 'the said John Winter... shall & will at their own Proper Cost & Charges well & Workmanlike Erect and Build off the Stocks' (ADM 106/3070).<sup>11</sup> Also, John Burchett's contract for building a Fourth Rate, evidently the *Saint Albans*, is in a similar manner: 'the said John Burchett... Shall and will at his Own proper Costs and Charges well and workmanlike Erect and Build at his Yard at Rotherhithe' (ADM 106/3070).<sup>12</sup> In fact, a similar sentence appears in an indenture for mercantile shipbuilding contracts as well. Henry snr's mercantile shipbuilding contract states:

<sup>&</sup>lt;sup>10</sup> Thomas Ellis' warship contract for the Sixth Rate *Pensance*, 3 October 1694.

<sup>&</sup>lt;sup>11</sup> John Winter's contract for the Third Rate *Norfolk*, 21 December 1691.

<sup>&</sup>lt;sup>12</sup> John Burchett's contract for a Fourth Rate, 16 November 1705.

...the said Henry Johnson... at his and their own proper Costs and charges for the Consideration hereafter in these presentes mentioned and expressed, shall and will on or before the Thirteenth day of December next ensuing the Date of these presents in good Orderly, substantial, Complete and workmanlike manner with sound, substantial, serviceable well grown Timber, And... the said Henry Johnson stituate and being in Blackwall aforesaid, make, build, finish, and launch forth in the river of Thames to and for the use of him the said John Pain... (Add Ch 13679)<sup>13</sup>

As such, it is evident that it was a common practice that the shipbuilder who undertook the business was responsible from the resource procurements to the hull launch and also the costs for the process.

Therefore, it is safe to conclude that for the new constructions of rated warships, warship contractors were always responsible for the process from resource procurements and the hull launch at the turn of the eighteenth century. Based on this finding, the paper now examines how the actual performance of the contract was carried out in response to these written agreements.

### 3. Navy's Negative and Positive Impacts on the Leading Warship Contractors

Against the revealed written agreements, this paper now focuses on the Johnson family's warship contracts to reconstruct the exact picture of how naval shipbuilding at Blackwall Yard was conducted. This section first examines the negative factors of the Navy's presence in Blackwall Yard's business: impressments. Then, it moves on to the positive aspects of the Navy's attitude towards the Johnsons: assistance beyond the agreements.

As seen in the previous section, warship contracts clarified that all process from resource procurements to hull launch was the shipbuilders' responsibility. Despite such obligation, examining their correspondence reveals that the Navy's own practice prohibited the contractors from fulfilling their responsibility. This practice was none other than notorious impressments. As the contemporary Navy did not have a formal system of conscriptions, it was a widely accepted practice for groups called 'press gangs' and naval officers onboard to forcibly take people engaged in maritime businesses on warships as sailors. Impressments have been a popular subject for both the contemporaries and modern scholars. Historians have

<sup>&</sup>lt;sup>13</sup> Henry Johnson snr's shipbuilding contract for Captain John Paine, 28 June 1675.

dealt with impressments in the context of social history onboard, especially (Haas, 1980, p. 427; Rodger, 2004, pp. 127-128). This paper perceives that the impressment issue was not only a social one but also an economic one since the impressments took workers away from private maritime businesses.

Such a situation, however, was not what the Navy Board desired, and it made a clear attempt to resolve the impressment issue. The Board issued protection tickets from impressments to warship contractors' workers. Countable protection tickets survive in the navy records. For example, a ticket dated in November 1707 can read as follows:

In Order to the present Service of Her Majesties' Navy, we do, by Virtue of the Power given us on that behalf, hereby strictly pray and require you to forbear the Impresting, or otherwise molesting the Bearer. John Darling Waterman, Employed in the Blackwall Barg by William Johnson Esq. (who is under Contract with this Board for Rebuilding in his Yard at Blackwall her Majesties' Ships the *Marlborough & Boyn*), in Towing Timber carrying other Stores, & performing other Services necessary towards the Rebuilding the said Ship, until the Last day of March next ensuing,

Provided his Age and Description be inserted on the other side, and he employed as above and not otherwise, as you will answer the contrary at your Perils. (ADM 106/629/181)<sup>14</sup>

While the contemporary survey and bills usually were hand-written and did not have a fixed format, many protection tickets had a printed format with blanks to fill in with the situational information, such as the workers' names and the shipyard they were working at. Additionally, the contractors frequently asked for protection for their workers, and the Board approved them on most occasions (ADM 106/390/221).<sup>15</sup> Coats wrote that 'Shipbuilders carrying out the Navy Board contracts were granted protection from the press for their shipbuilders, but these did not apply to other workers' (Coats, 2006, p. 422). In reality, various other workers also received the protection, as the example here shows. This implies the Board's effort to systematically enforce the protection to secure warship contractors' swift business.

Despite its efforts, the Board's protection often came to be violated by press gangs and even naval officers onboard. Owing to the unsecured situation, the workers at private yards started boycotting from the fear of impressments. When Lieutenant Rider pressed Henry's man and

<sup>&</sup>lt;sup>14</sup> The Navy Board's protection, 7 November 1707.

<sup>&</sup>lt;sup>15</sup> Henry Johnson to the Navy Board, August 1689.

refused to release him, Henry petitioned the Board in August 1694. This letter well expresses the workmen's worriedness about the little value of protection tickets:

I have write several letters to him [Leautenant Rider] for to Clear him, but will not, but makes a slight of your Protection, and speaks very unworthy of it, which makes my Men think themselves not safe through this Occation, I hope your Honours will take the thing into Consideration to give him a Reprimand for his Impotence in denying your power, and also Order the Man's discharge which will quiet my Men, and also very much Oblige him. (ADM 106/451/50)<sup>16</sup>

The letter indicates that the Board's lack of authority to enforce the protection was widely apprehended among shipyard workers, and the practice of impressments was a real hindrance to warship contractors' business with the Navy.

Possibly due to the repeated violations of the Board's protection, some contractors also wrote a certificate for their workers themselves. For example, Henry's ticket for March 1694 can read:

These are to Certifie whom it may Concern that the bearer hereof Thomas Bedforde is a Shipwright and is Employed in my Yard at Blackwall on the Building of Two of their Majesties' Fourth Rate Frigates and is Mentioned in the Said Protection not to be Molested or Imprest Proven Under my hand this 30th of March 1694 Hen: Johnson (ADM 106/449/26)<sup>17</sup>

However, it is unlikely that such private protection tickets made any difference at the time when officers onboard violated even the Navy Board's authority. Yet, such private tickets rather reflect the desperate situation of warship contractors in securing their workers' working conditions.

The recognised naval officers' complaints of privately built warships must be consulted in this context. Henry was the subject of criticism by the Navy regarding his performance in warship contracts as well. However, the poor assessments of the contracts at Blackwall Yard were not the result of Henry's negligence, but they coincided with increasing impressments. Woolwich officers noted some defects in their surveys of the *Dreadnought, Lion, Oxford*, and *Charles Gally* in August 1694 (ADM 106/455/110; ADM 106/458/173).<sup>18</sup> The report says, 'the plank on the

<sup>&</sup>lt;sup>16</sup> Henry Johnson to the Navy Board, 2 August 1694.

<sup>&</sup>lt;sup>17</sup> Henry Johnson's protection ticket, 30 March 1694. Wyatt of Hampshire also issued private protection tickets. ADM 106/428/141, 142, 143, [William Wyatt's protection to his workers, 1693].

<sup>&</sup>lt;sup>18</sup> George St Lo to the Navy Board, 25 August 1694. Woolwich officers to the Navy Board, 16

outside which seems to me to be much shaken and worse than what I have observed to be put in other Contract ships'. The summer of 1694 was exactly when Henry appealed to the Board that the impressment issue was preventing his workers from coming to work (ADM 106/451/50). The evident shortage of workforce did not help the situation. As such, not only did rapid naval shipbuilding during wartime cause the shortage of labourers, but the Navy's practice of impressments further exacerbated the working environment of contractors' yards.

The turn of the eighteenth century was a period of increasing impressments. It is not counterintuitive that impressments were intensified as the war with the continent escalated. The impressment issue heightened during the War of the Spanish Succession (1702-1713) at the beginning of the eighteenth century. By the time, William Johnson (life: c. 1660-1718), Henry's younger brother, took over the Blackwall Yard business. It is plausible that Henry left the site and passed the management of the yard to William at the start of the eighteenth century. For instance, the Navy's survey of 1703 notes the works on the Dunkirk and Plymouth at Blackwall Yard with William's name, likely his earliest contracts (Merriman (Ed.), 1961, p. 70). William is sometimes falsely disassociated with warship contracts, probably because Henry was the formal owner of the yard throughout the period. Green and Wigram (1881) especially contains some errors, such as the statements that William 'had no connection with the yard' and that Blackwall Yard was passed to Philip Perry after Henry's decease in 1693 (pp. 20-22). These descriptions do not accompany William's abundant correspondence with the Navy Board regarding his warship contracts and Henry's existing letters up to 1714 (Add MS 22186 174).<sup>19</sup> On the contrary, William contributed to the Navy's efforts throughout the War of the Spanish Succession. Philip Banbury claimed that 'No ships are recorded between 1706 and 1736' at Blackwall Yard (Banbury, 1971, pp. 114-115). Even though the documents became scarcer in the 1710s, William's letters can provide great insights into the yard's naval shipbuilding business.

Willaim left abundant records relating to the impressment issue at Blackwall Yard. At the end of 1703 already, William complained that his men were pressed and could not continue with his work unless the Navy would provide some assistance (ADM 106/573/104, 106, 110).<sup>20</sup> Further troubles could be reconstructed through William's repeated petitions to the Navy Board. In September 1704, William wrote to the Board that he could not launch the *Dunkirk* 

August 1694.

<sup>&</sup>lt;sup>19</sup> Henry Johnson to Mr Manning, 8 June 1714.

 <sup>&</sup>lt;sup>20</sup> William Johnson to the Navy Board, 25 November 1703. William Johnson to the Navy Board,
 30 November 1703. William Johnson to the Navy Board, 3 December 1703.

and *Plymouth* on time since his pressed men had not been released. The letter can read: ...for I have all materials now in the yard & at the waterside ready to Ship had I but hands to perform the work & I shall Strenuously endeavour to procure as many more of them as I can wherein (if I meet with Success) I may finish her sooner for I am here that is my Interest (ADM 106/587/121)<sup>21</sup>

The event shows that even when warship contractors fulfilled their parts, the Navy's impressments undermined their efforts by taking the workforce away from the yards.

It is difficult to gauge how each impressment impacted private yards' shipbuilding process precisely due to the lack of these yards' internal records. Nevertheless, it is clear that even Blackwall Yard, the largest private yard at the time, was heavily exhausted by the ongoing labour shortage and intensifying impressments. When the Navy offered another warship contract to William in February 1707, he turned it down:

for having already two Contracts with your Board and under severe penalties in case of failure in time, I dare not at this juncture take more of such great Works for fear it might prove a Disappointment to the Government (ADM 106/620/23)<sup>22</sup>

Impressments further exacerbated the labour shortage situation in the following month. William again feared the penalty in case he could not complete the ongoing contract in time and begged the Board to deal with the situation of impressments (ADM 106/620/41).<sup>23</sup>

As such, Henry and William's correspondence with the Navy highlights that the practice of impressments was the Navy's major negative influence on contractors' business, not its reluctant attitude towards outsourcing. Contrarily, the examination of the interactions between the two parties rather revealed that the Navy Board made every effort to secure the safety of workers at contractors' yards. However, its immature authority undermined the Board's efforts. The Board countered by issuing tickets, but they were simply violated by press gangs and officers onboard against the Board's will.

The impressment issue may reflect the contrast of interests between the Navy and military entrepreneurs. But more explicitly, it points to the conflict between the Navy's civilian and military sectors. It is important to recognise that not all sectors of the Navy were on the same page, and press gangs and naval officers onboard executed impressments. It might be true that

<sup>&</sup>lt;sup>21</sup> William Johnson to the Navy Board, 12 September 1704.

<sup>&</sup>lt;sup>22</sup> William Johnson to the Navy Board, 17 February 1707.

<sup>&</sup>lt;sup>23</sup> William Johnson to the Navy Board, 21 March 1707.

the royal dockyards also pressed workers until the end of the War of the Spanish Succession (Hill, 1995, p. 128). However, warship contractors' petitions to release their workers were usually from officers onboard and rarely from the royal yards. This reinforces the idea that the Board, the supervisor of the royal yards, had a clear attitude to protect their contractors' workplaces. When warship contractors asked for the release of their workers, the Board usually ordered the officers to release the men immediately. However, the sheer number of frequent impressments halted private yards' shipbuilding for the Navy. The analysis here pointed out that the Board tried to guarantee warship contractors' swift business by issuing protection tickets from impressments. However, the naval administration was not yet mature enough to enforce the Board's protection over impressers.

Such negative impacts of the Navy's presence in the Johnsons' business should not cloud its active support of Blackwall Yard. The paper now investigates how the Navy Board intervened in Blackwall Yard in a positive way. As impressments exacerbated the workforce at the yard, the Johnsons might have been facing a shortage of naval stores, too. Due to the skyrocketing demand for warships during wartime, the market for naval stores was also exacerbated. In addition, it is plausible that the unstable imports during wartime further inflated the prices of naval stores. Such situations hindered contractors from complying with their responsibility for resource procurements. In April 1692, for example, Henry petitioned the Navy Board to increase the prices for his warship contracts due to the scarcity of naval stores and workmen (ADM 106/420/326).<sup>24</sup> Traditionally recognised difficulty at the royal dockyards with resource procurements thus equally burdened on private yards.

The Navy Board was not ignorant of the contractors' difficult situations and provided various support outside of issuing protection tickets. In September 1691, Henry asked for the supply of workmen from the royal yards, considering the troubles in securing the workforce (Add MS 22183 191). The Navy's initial reaction was cold. Haddock replied to Henry that it was on warship contractors to procure needed resources and criticised him as follows:

Nor can you be less unsensible of the unusualness of lending Workmen & Material out of their Majesties' yards to any contractors, then you are of the extraordinary occasions that are at this time approaching for the use of as many as can be had, and so do the more admire at your asking the Loane of either at a juncture when both are like to be so much wanted for Carrying on the Service of the Navy... (Add MS 22183 192)<sup>25</sup>

<sup>&</sup>lt;sup>24</sup> Henry Johnson to the Navy Board, 6 April 1692.

<sup>&</sup>lt;sup>25</sup> Navy Office to Henry Johnson, 14 September 1691.

Haddock's reaction was not unreasonable, as the signed contract defines that it was the warship contractors' obligation to prepare needed materials and cover the costs.

Nevertheless, the Navy soon provided Henry with some help beyond its contractual obligations in the written agreement. One help Henry received was the six caulkers from the Chatham dockyard in March 1692, correlating to the period of the contract for the much troublesome *Dunkirk* (ADM 106/419/56, 65).<sup>26</sup> Yet, the six caulkers could not sufficiently ease Blackwall Yard's burden. Henry complained to the Navy at the end of the month that half of the caulkers did not work even with a higher payment, and he needed to delay the launch (ADM 106/420/323).<sup>27</sup> Moreover, Henry faced further struggles when the launch was approaching. The documents on the third instalment of the contract state that the launch date should be 22 April (Add MS 22183 205).<sup>28</sup> However, Henry apparently could not complete his contract on time. The report of May 1692 notes that the *Dunkirk* was almost completed, but the Navy required Henry to have some modifications to the ship (Add MS 22183 202).<sup>29</sup> Yet, there is no further trace of the *Dunkirk* at Blackwall.

One may interpret the event as the Navy Board's insufficient support of contractors with the result of the contract for the *Dunkirk*. However, as Haddock implied, the royal yards faced labour shortage equally at the time, and the six caulkers might have been the only resources the yards could spare. The event rather reflects the Board's supportive attitude to providing a labour force in times of pressed labour market. Again, it cannot be stressed too much that the resource procurement was on a warship contractor, and the Navy thus provided support beyond its written responsibility.

It is difficult to prove to what extent the Navy Board's resource supplies helped Blackwell Yard's shipbuilding due to the lack of the yard's in-house records. Nevertheless, such support could motivate shipbuilders to engage in additional contracts. Despite the difficulties in procuring labour and materials, Henry was still eager to obtain more contracts. In fact, the struggles with the *Dunkirk* did not prevent Henry from getting more contracts, and he signed one in March 1691 for building a shallop, a small boat usually used for coastal navigation (Add

<sup>&</sup>lt;sup>26</sup> Edward Gregory to the Navy Board, 17 March 1692. Edward Gregory to the Navy Board, 27 March 1692.

<sup>&</sup>lt;sup>27</sup> Henry Johnson to the Navy Board, 28 March 1692.

<sup>&</sup>lt;sup>28</sup> The Navy Board to the Treasurer, 22 April 1692.

<sup>&</sup>lt;sup>29</sup> The commissioners to the Admiralty, 12 May 1692.

MS 22183 173-174).<sup>30</sup> From 1693 to 1694, Blackwall Yard was repairing and cleaning the *Dreadnought, Lion, Oxford,* and *Charles Galley* (ADM 106/458/173). Thus, it is plausible that the Navy's supportive attitude led shipbuilders to engage in further warship contracts despite the ongoing resource shortages. In September 1695, the Navy Board issued the order to sign contracts with Henry for two Fourth Rates (ADM/A/1823/162; ADM 106/475/254).<sup>31</sup> These were later named the *Blackwall* and *Guernsey*, which became Henry's last new constructions of warships (ADM/A/1831/242).<sup>32</sup> Naval overseer Lawrence asked to send more shipwrights to Blackwall Yard for the work on the two warships in December 1695 (ADM 106/480/230).<sup>33</sup> The letter shows both that the labour shortage was persisting and that the Navy kept its supportive attitude until the last phase of Henry's warship contracts.

Another support the Navy provided to warship contractors was the help with the launching process. Overseers and the contractors themselves often recorded events surrounding the launching of a hull, the last phase of warship contracts in most cases, because the process did not often go straight. What imposed additional difficulty to the process was that launching required a spring tide. Even though a warship contract clarified the launching date, they sometimes needed to delay the launch to wait for the tide (ADM 106/441/46).<sup>34</sup>

The Navy Board was well aware of the difficulty of the launching process, and when contractors asked for some assistance, the Board was not reluctant to comply evidently (ADM 106/486/7; ADM 106/490/100).<sup>35</sup> For example, in June 1696, Henry asked to borrow launching equipment to complete the *Blackwall* and *Guernsey*. Navy officers initially rejected the request as they were not happy with the conditions of the warships (ADM 106/483/189; ADM 106/486/7; Add MS 22183 229).<sup>36</sup> Yet, the Navy finally directed the ships to be launched before missing the spring tide (ADM/A/1831/242; ADM 106/497/250). The Navy's support for launching was not limited to this time. In December 1707, William prepared for the launch of the *Marlborough* and requested bilgeways, rails for launching a hull, from the Woolwich

<sup>&</sup>lt;sup>30</sup> Henry Johnson's warship contracts for building a shallop, March 1692.

<sup>&</sup>lt;sup>31</sup> The Admiralty to the Navy Board, 12 September 1695. John Quallett to the Navy Board, 2 September 1695.

<sup>&</sup>lt;sup>32</sup> The Admiralty to the Navy Board, 26 June 1696.

<sup>&</sup>lt;sup>33</sup> Joseph Lawrence to the Navy Board, 31 December 1695.

<sup>&</sup>lt;sup>34</sup> John Winter to the Navy Board, 2 March 1693.

<sup>&</sup>lt;sup>35</sup> William Collins to the Navy Board, 25 June 1696. Henry Johnson to the Navy Board, 13 June 1696.

<sup>&</sup>lt;sup>36</sup> William Collins to the Navy Board, 19 June 1696. Navy Office to Henry Johnson, 19 June 1696.

dockyard while inviting the Board officers to dine (ADM 106/620/143; ADM 106/629/142).37

In addition, it is important to note that contemporary shipbuilding was highly sensitive to weather conditions. The Navy Board was aware of such difficulty and pardoned the contractors from the deduction of payments on occasion. This aspect can be observed in Herny's last warship contract, the rebuilding of the *Suffolk*. In December 1697, Henry appealed that Blackwall was experiencing extreme weather and short daytime during the winter, which prevented him from finishing the contract by the agreed date (ADM 106/506/353).<sup>38</sup> The letters were not just excuses for the delay. They detail the impact of weather conditions on the launching process. Of course, ships could not sail under extreme weather, but adverse weather such as rainstorms could have a wider impact with floods interrupting the swift completion of shipbuilding projects (ADM 106/485/392).<sup>39</sup> When Edward Swallow of Rotherhithe heard the Navy's concern for the delay with the Fourth Rate *Leopard*, for example, he responded that 'no wilful neglect or delay has been committed by me in carrying on the said Work, But the Weather has been so Wet as (not only) hindered the Workmen; But also (by the great floods of Water has prevented the loading of a Barge' (ADM 106/578/3).<sup>40</sup> Considering contemporary shipbuilding's vulnerability to weather conditions, the pardon from deducting payments can be interpreted as another aspect of the Board's supportive attitude towards warship contractors.

The inquiry into the navy records and the Johnsons' letters revealed the Navy's various assistance to Blackwall Yard's warship contracts. While the procurement of resources was on the warship contractors' side, the Navy often provided support beyond its stated obligation. It might be true that navy officers were reluctant to commission naval shipbuilding to private yards at first, as various studies stressed. Nevertheless, once the contracts were out, it was a prime concern for the Navy Board to complete the work as well. The officers at the Board and the royal dockyards kept close eyes on contractors and helped them in time of need. The Navy's practice of impressments indeed hindered the Johnsons' naval shipbuilding, but the Board made every effort to improve the situation. This supportive attitude from the Navy was one reason that the Johnsons could engage with naval shipbuilding throughout the period despite the pressing situation of the material and labour markets. As such, the Navy's support

 <sup>&</sup>lt;sup>37</sup> William Johnson to the Navy Board, 22 December 1707. William Johnson to the Navy Board, 23 January 1708.

<sup>&</sup>lt;sup>38</sup> Henry Johnson to the Navy Board, 20 December 1697.

<sup>&</sup>lt;sup>39</sup> Benhamin Furzer and Joseph Downes to the Navy Board, 1 April 1696.

<sup>&</sup>lt;sup>40</sup> Edward Swallow to the Navy Board, 4 January 1703.

of warship contracts stretched from its beginning (resource procurements) to its end (the hull launch) beyond its agreed responsibility on a signed contract.

#### 4. Conclusion

The present paper reconstructed the interactions between the Navy and private shipbuilders to grasp how private yards conducted the colossal projects of naval shipbuilding and how the Navy's actions and reactions impacted warship contracts. The analysis has revealed the following two points. Firstly, warship contractors faced troubles of resource shortages, impressments, and launching problems. Secondly, the examination of the correspondence revealed the Navy Board's supportive attitude towards warship contractors, contrary to the traditional image of the Navy's reluctance. Although contracted warships received critical assessments, it is important to stress that warship contractors equally suffered from the pressing material and labour markets as the royal yards did (Haas, 1980, p. 420). The analysis here made the importance of the Navy's assistance with warship contracts more explicit. Even the Johnsons, the largest contracting family at the time, could not complete a colossal project of naval shipbuilding. The signed contracts clarify that warship contractors were responsible for all aspects, from resource procurement to the hull launch. Nevertheless, the Navy often assisted the shipbuilders beyond its contractual obligations to make them comply with the agreed launching dates.

One may stress the negative side of the Navy's presence in private shipyards' business. This paper also revealed that the Navy's practice of impressments was not only a social matter, as historians often depicted, but also had an economic impact. It was a part of the reason for warship contractors' struggles to secure a workforce, thus undermining the Navy's own shipbuilding project, too. However, such self-contradictory action was owed to the Navy Board's structural weakness rather than its negligence in the management of warship contracts. The Board clearly saw the impressments of the contractors' workers as problematic and issued protection tickets for them. However, navy officers onboard needed more sailors as the wars with the continent intensified and disregarded the protection. In terms of the contract relationship, therefore, the lack of the Board's authority to strictly enforce its power was a more direct hindrance than the recognised Navy's critical view against outsourcing. Its reaction to the impressment issue rather reinforces the Board's supportive attitude towards warship contractors.

In the end, the numerous accounts of naval officers' criticisms towards the quality of privately built warships should not cloud the private actors' contributions. Naval historians often stressed the French upper hand in the quality of warships. The French navy, for example, established the education system of master shipwrights with a theoretical design of warships by 1741. Haas stated that 'French warships as a result were better designed, although perhaps not better built, than British warships' (Haas, 1994, p. 24). Nevertheless, as the technological development during the sailing era was relatively slow, Harding argued that Britain's naval 'Dominance was partly assured by out-building the enemy' (Harding, 1995, p. 135). The influence of the sheer number of privately built warships and their achievements in naval operations should not be overlooked. Henry snr's early works served in Britain's naval operations into the War of the Spanish Succession, climaxed in the capture of Gibraltar in 1704 (Green & Wigram, 1881, p. 21). As it did in prominent naval confrontations sometimes, warship contractors' frigates also played a key role in trade protection when France focused on the destruction of enemy trade. As such, warship contractors played a great part in Britain's maritime efforts throughout the long eighteenth century.

Collectively, the paper's findings highlight that the Navy Board's commitment to warship contracts was one reason for the rapid expansion of warship contracts at the turn of the eighteenth century. Even the largest private yard at the time, Blackwall Yard, could not complete naval shipbuilding without close support from the Navy. The Board's supportive attitude, revealed in this paper, points to cooperative aspects between the royal and private yards. The support allowed the shipbuilders to complete their naval shipbuilding and incentivised them to sign warship contracts one after another during pressing labour and material markets. The Board needed the contractors to finish their work to keep up with the rising demand for warships. Though at first, the Board might have been reluctant to outsource its shipbuilding, once it was outsourced, completing the contract was firmly in the Navy's own interest. Thus, when the contractors' yards faced difficulties, the royal yards often sent needed supplies even though signed contracts clearly defined the shipbuilders' responsibility for resource procurements. The traditional negative image of the Navy was more due to the structural weakness of the Board rather than deliberate policy. Without the Navy's commitment and close assistance, the private shipyards could not catch up with the large project of naval shipbuilding. The Navy's active support provides one reason to call Britain in the long eighteenth century a 'contractor state'.

All in all, the present paper gives one example of the importance of the state's intervention in private enterprises. The state's active role is essential not only to achieve its own strategic end but also to counter the various barriers that private businesses face, especially during the difficult time of war.

#### References

ARCHIVAL SOURCES

Add Ch 13679, British Library, [Henry Johnson snr's shipbuilding contract for Captain John Paine, 28 June 1675].

Add MS 22183, British Library, [Johnson Papers: Papers Relating to the Navy 1638-1699]. Add MS 22186, British Library, [Johnson Papers: Miscellaneous Letters 1662-1720].

ADM 106, National Archives at Kew, [Navy Board: Records, in-letters, miscellaneous]. ADM/A, Caird Library (National Maritime Museum), [Navy Board in-letters from the

Admiralty, 1689-1815].

**LITERATURE** 

- Banbury, Philip (1971). *Shipbuilders of the Thames and Medway*. Newton Abbot: David & Charles.
- Brewer, John (1989). *The Sinews of Power: War, Money and the English State 1688-1783*. Cambridge, MA: Harvard University Press.
- Coats, Ann (2006). Efficiency in Dockyard Administration, 1660-1800: A Reassessment. In Richard Harding (Ed.), *Naval History: 1680-1850* (413-429). Hampshire: Ashgate.
- Dodds, James, and Moor, James (1995). *Zusetsu Eikoku no Hansen Gunkan*, Watanabe Shuji (Trans.), *Building the Wooden Fighting Ship*. Tokyo: Genshobo.
- Fox, Frank (1992, August). The English Naval Shipbuilding Programme of 1664, *The Mariner's Mirror*, 78:3, 277-292.
- Green, Henry, and Wigram, Robert (1881). *Chronicles of Blackwall Yard*. London: The British Library.
- Haas, J. M. (1980, December). Work and Authority in the Royal Dockyards from the Seventeenth Century to 1870. *Proceedings of the American Philosophical Society*, 124:6, 419-428.
- Haas, J. M. (1994). *A Management Odyssey: The Royal Dock-yards, 1714-1914*. Lanham: University Press of America.
- Harding, Richard (1995). *The Evolution of the Sailing Navy, 1509-1815*. New York: St. Martin's Press.
- Harding, Richard (2012). Contractors, Warships of the Royal Navy and Sea Power, 1739-1748.
  In Richard Harding and Sergio Solnes Ferri (Eds.), *The Contractor State and Its Implications, 1659-1815* (153-168). Las Palmas de Gran Canaria: Universidad de Las Palmas de Gran Canaria, 2012.
- Hobhouse, Hermione (ed.), 'Blackwall Yard: Development, to c.1819', *British History Online*, <a href="https://www.british-history.ac.uk/survey-london/vols43-4/pp553-565">https://www.british-history.ac.uk/survey-london/vols43-4/pp553-565</a>, [accessed on 1 November 2024].
- Hill, J. R. (Ed.), (1995). *The Oxford Illustrated History of the Royal Navy*. Oxford: Oxford University Press.
- Holland, A. J. (1971). *Ships of British Oak: The Rise and Decline of Wooden Shipbuilding in Hampshire*. New Abbot: David & Charles.
- Knight, Roger, and Wilcox, Martin (2010). *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State.* Woodbridge: Boydell Press.
- Merriman, R.D. (Ed.), (1961). *Queen Anne's Navy: Documents concerning the administration of the Navy of Queen Anne, 1702-1714.* London: Navy Records Society.
- Pool, Bernard (1966). *Navy Board Contracts, 1660-1832: Contract Administration under the Navy Board*. Connecticut: Archon Books.
- Rodger, N. A. M. (2004). *The Command of the Ocean: A Naval History of Britain, 1649-1815.* London: Penguin Group.
- Sánchez, Rafael Torres (2016). *Military Entrepreneurs and the Spanish Contractor State in the Eighteenth Century*. Oxford: Oxford University Press.