

# **The Victualling Board and the Provisioning of the Royal Navy, 1793-1815**

## **Contract, Bill, and Fleet in the Long War**

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## **Preface. The loading dock**

### **Receipt, inspection, and payment**

At Portsmouth, Deptford, and Plymouth, a contractor's delivery passed through three linked stages. The standing contract specified the article and rate; the yard inspector accepted, rejected, or rebated each parcel; and the receiving purser entered accepted provisions in the ship's inventory against the complement and period they were meant to serve. The yards applied the sequence to beer, biscuit, salted meat, oatmeal, vinegar, cheese, butter, and the other articles of the ration.<sup>1</sup>

Acceptance produced another document: a victualling bill drawn against the delivery and entered in the yard's register. The contractor could hold the bill to maturity or discount it through a City house, turning the state's promise into working capital for the cattle, grain, and malt required by the next contract. Inspection joined the material ration to the Board's accounts; the bill joined those accounts to the Treasury and the London credit market.

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<sup>1</sup>Roger Knight and Martin Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State* (Boydell Press, 2010); Janet Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era* (Chatham Publishing, 2004).

## What the delivery was part of

At the outbreak of war with the French Republic in February 1793 the Victualling Board of the Admiralty controlled the largest manufacturing and processing operation in the British state. Its establishments at Deptford, Portsmouth, and Plymouth included breweries with a peacetime output measurable in hundreds of thousands of gallons a week, bakeries turning wheat and pea flour into ship's biscuit at wartime rates approaching thirty thousand pounds' weight a day at Portsmouth alone, slaughterhouses for the autumn kill and salting operations for beef and pork, cooperages producing the casks in which the salted meats and the beer went to sea, oil-mills, and mustard-mills. It employed, at wartime peak, several thousand men in the yards and drew on a contract network across the British Isles, the Baltic, the Mediterranean, and the Atlantic that in the aggregate approached the scale of a small national economy.<sup>2</sup> Between 1793 and 1815 the fleet the Board fed rose from a peacetime establishment of about sixteen thousand seamen to a wartime strength that averaged well over a hundred thousand and, in the pressed years after 1804, approached a hundred and forty thousand at any given quarter. To feed those men at sea, at a standard of ration higher and steadier than any earlier fleet had known, was the operational problem to which the Board had answered its way since 1683 and to which it now answered again on a scale nothing in the Board's previous existence had required.<sup>3</sup>

The answer took three forms and they belong together. The first was industrial: the Board's yards produced beer, ship's biscuit, and salted meat at unprecedented British naval scale. The second was contractual: where the yards did not themselves produce, the Board contracted; where the yards produced, it contracted for their inputs. Standing contracts with named merchants, renewed by tender and enforced by inspection at the loading dock, delivered the wheat, malt, hops, live and dead stock, oatmeal, cheese, butter, vinegar, and lemon juice that entered the ration between 1793 and 1815.<sup>4</sup> The third was financial: the Board paid the contractor in a victualling bill available for discount or for tender to the Treasury when it fell due. Alongside it circulated the navy bill drawn by the Navy Board for wages and stores; together the two instruments formed a substantial fraction of the discount market's traded volume in the years of Pitt's second ministry and beyond.<sup>5</sup>

In the Board's operation, the state's borrowing capacity reached the loading dock and became beer, biscuit, salt beef, and, from 1795, lemon juice for issue against scurvy. Rodger and Morriss supply the naval, administrative, and logistical frame;<sup>6</sup> Knight and Wilcox make the Board and its contractors the direct subject; Macdonald supplies the galley-level detail of the

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<sup>2</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Roger Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815* (Cambridge University Press, 2011).

<sup>3</sup>N. A. M. Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815* (Allen Lane / National Maritime Museum, 2004).

<sup>4</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>5</sup>John Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783* (Harvard University Press, 1990); Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>6</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

ration; Brewer establishes the fiscal-military state whose eighteenth-century development the Napoleonic decades extend.<sup>7</sup>

### **Credit into endurance**

Brewer's *Sinews of Power* prepared the ground, and the Victualling Board is its sharpest naval case: the Board converted the state's parliamentary credit into naval endurance, coordinating contracts, inspection, processing yards, paper payment, and replenishment across distance.<sup>8</sup> This did not win the tactical actions at the Nile, Trafalgar, or the Basque Roads. It changed the choices available to commanders: how long a blockade could be held without a return to port, how far a squadron could cruise, and how many ships could remain in commission. The direct comparison with France supports the conclusion that the British arrangement materially increased range and time on station.<sup>9</sup>

## **Chapter 1. 1793: The Board and its estate**

### **The Board's office and the yards**

The Commissioners of Victualling met in a room at Somerset Place, on the Strand, six days a week from ten in the morning until four in the afternoon. In February 1793, at the outbreak of war with the French Republic, the Board was composed of five commissioners under a Chairman and a Comptroller, assisted by a secretary and a small clerkly establishment. Its administrative descent ran from the Admiralty by way of a series of standing orders that had barely altered in structure since the 1680s, when the Board was constituted as a subordinate department of the Navy. Its accountable relation ran to the Navy Board, which discounted or paid its bills at maturity; through the Navy Board to the Treasury; and through the Treasury to Parliament, which voted its supply annually in the naval estimates.<sup>10</sup> The Board's minutes for the first quarter of 1793 record the ordinary sequence of its business: receipt of correspondence from the yards; determination of tenders; entry of new contracts; direction of the yards' orders; consideration of applications from contractors, pursers, and officers; the audit of accounts; and the drawing of bills against the year's estimate.<sup>11</sup>

The Board's estate, in February 1793, was three yards. The first and largest, at Deptford, on the south bank of the Thames a mile below the Tower, occupied about thirty acres of ground and consisted of a brewhouse, a large bakery, a mustard-mill, an oil-mill, a slaughterhouse, salting-houses, cooperages, storehouses, wharves, and the residences of the Storekeeper and the resident officers. The second, at Portsmouth, immediately inside the harbour opposite

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<sup>7</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>8</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>9</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>10</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>11</sup>Victualling Board, "Victualling Board Minutes, 1793-1815," The National Archives (UK), Kew, 1793.

the dockyard, occupied a similar although smaller area with the same establishments in miniature and served the ships fitting or victualling at Spithead and in the harbour. The third, at Plymouth, on the shore of Stonehouse Pool between Devonport dockyard and the town, served the ships of the Western Squadron and the Channel Fleet when it lay in the west. Each yard was under a Storekeeper, whose authority derived from the Board's standing orders and whose accounts ran monthly to Somerset Place; each carried a resident staff of clerks, coopers, brewers, bakers, salters, slaughtermen, labourers, and porters; each had its own vessel or vessels for local transport, and its own moorings or receiving hulks at which the ships of the fleet took in their provisions.<sup>12</sup> Beyond the three principal yards stood a subsidiary establishment on the Thames at Rotherhithe, the Board's cooperage at Redriff and its storehouses at Wapping, and, at Dover, Harwich, and one or two smaller ports, receiving houses for contract deliveries directed to local squadrons.

### **The peacetime scale and its wartime multiplier**

The three yards in the last peacetime year, 1792, had produced and issued provisions to a naval establishment of about sixteen thousand seamen, in an unweighted average. The great bulk of the beer produced at Deptford in that year, well over half of the yard's total output, went to Channel-squadron guard ships and to vessels fitting for overseas stations; the biscuit produced at Portsmouth and Plymouth, in the range of six or seven thousand pounds' weight a day at each yard, met the establishments of the guard ships and small squadrons and left, at the end of the year, a reserve of biscuit in the storehouses at the two western yards sufficient for four or five months' issue at wartime scale. The Board's contract network in 1792 stretched to the Baltic ports of Danzig and Riga for wheat and hemp, to the Mediterranean for lemons and salt, to Ireland for beef and butter, to the West Country of England for cider, and to a network of London and provincial merchants for oatmeal, cheese, mustard, peas, and vinegar. The character of the network was miscellaneous by design. The Board preferred, on the standing orders it had followed since the Anglo-Dutch wars, to hold no single class of provision in a single contract with a single merchant, and its contract books in the 1790s show, for most classes, three or four merchants under simultaneous contract at any one time<sup>13</sup>.<sup>14</sup>

The wartime multiplier applied to that establishment was immediate and unforgiving. The Admiralty's mobilisation orders of February 1793 raised the manning target to about forty-five thousand seamen for the initial mobilisation, with the expectation of a further rise to sixty thousand by the end of the year. The actual figures, reconstructed from the Navy Board's returns and cross-checked against the Victualling Board's issue books, put the fleet in commission at about fifty-two thousand men by August, at seventy thousand by December, and, by the end of the following year, at over eighty thousand. The Board's issue books at

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<sup>12</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>13</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815," The National Archives (UK), Kew, 1793.

<sup>14</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

Deptford for the third quarter of 1793 show a threefold increase in beer output over the corresponding quarter of 1792 and a doubling of biscuit issues; Portsmouth's returns show a similar rise in the fourth quarter, and Plymouth's a fourfold rise between the third and fourth quarters as the Western Squadron increased in strength. The rise in issues was met, on the production side, in three ways at once: by extended hours at the yards, worked in double shifts and at overtime rates; by increased contract volume with the standing merchants; and by the entry of new contracts, taken by tender at the Board and often for shorter terms than the peacetime standard, with merchants who had not held contracts with the Board in the closing years of peace<sup>15</sup>.<sup>16</sup>

### **What the Board defended in the closing years of peace**

The Board's peacetime papers of 1789 to 1792 register a persistent argument with the Treasury over the level of establishment at the yards. At the peace of Versailles, the Board's peacetime establishment had been fixed by the Treasury at a level substantially below the wartime peak of the American war, and repeated proposals from the Board to retain a larger cooperage staff at Deptford, a larger baking establishment at Portsmouth, and reserves of biscuit and beer in the storehouses at all three yards had been carried by the Board only after prolonged correspondence, recorded in the outletter books of 1789 to 1792. The argument was, at bottom, an argument about a reserve. The Board proposed to keep, in peacetime, a productive capacity and a stored provision that a strict peacetime economy did not require. It proposed to hold a coopering staff sufficient to double its output at short notice, a brewing capacity that ran below its physical maximum, and reserves of biscuit and beer at the yards sufficient to victual the first squadron dispatched under wartime orders without waiting on the ovens and the mash-tuns to catch up.<sup>17</sup>

The Treasury's argument in reply was the standard argument of a Treasury in peacetime and is preserved, in the minutes and out-letters of 1789 to 1792, in the reasonable form the Treasury clerks of the period were capable of. Every idle cask and every unwarranted labourer at Deptford was a claim on the Consolidated Fund that could not be reconciled with the peacetime estimate. The Treasury proposed reductions and the Board resisted them. The reductions were, on the whole, less than the Treasury proposed and greater than the Board wished; the Board retained, at the outbreak of war in 1793, a productive capacity and a reserved provision meaningfully larger than a strict peacetime economy would have allowed but meaningfully smaller than a prudent wartime provision would have required.<sup>18</sup> The mobilisation of 1793 drew on capacity the Board had spent the previous decade defending. It also drew, at once, on a reserve that had been diminished by every year of the argument.

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<sup>15</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>16</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>17</sup>Victualling Board, "Victualling Board Out-Letters, 1793-1815," The National Archives (UK), Kew, 1793.

<sup>18</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

The character of that reserve had a direct operational consequence in the first year of the war. Where the Board had retained an establishment sufficient to double its output at short notice, the mobilisation of 1793 was met at the yards without a break in the supply and without recourse to the market for staples the yards produced. Where the peacetime reduction had cut into the reserve, the shortfall was made up from the market and at a cost that appears in the contract books of 1793 as a premium of a shilling or two above the peacetime rate on beef, biscuit flour, and butter for the first six months of the war. The Board reported the premium to the Navy Board and, through the Navy Board, to the Treasury; the reports do not appear to have altered the Treasury's inclination in later peacetime intervals to press the same reductions. The peacetime economy argument recurred at every peacetime interval of the long war and was to reappear, in a modified form, in the reform legislation of 1817.<sup>19</sup>

### **The Comptroller and the Chairman**

The internal organisation of the Board in 1793 turned on two officers. The Chairman of the Commissioners, a senior naval officer or occasionally a senior civilian, presided at the daily Board meeting, signed the Board's letters and minutes, and represented the Board at the Admiralty. The Comptroller of Victualling, an office of substantial administrative weight, held the responsible day-to-day direction of the Board's operations, supervised the storekeepers of the yards and the Board's clerical establishment at Somerset Place, and countersigned the bill-register in which the Board's outstanding paper obligations were entered as they were drawn at the yards and at the office. The two offices, taken together, embodied the doubled character of the Board's business: as a policy department reporting to the Admiralty and Parliament, and as a working manufactory and contracting agency answering, day by day, to the demands of the fleet. Knight and Wilcox have described the Comptrollership as the pivot on which the wartime operation turned; the description is well supported in the minutes of the 1790s, in which the Comptroller's memoranda and internal reports carry the technical burden of the Board's decisions and the Chairman's signature carries their formal authority.<sup>20</sup>

The other officers of the Board, in 1793, ran a small establishment. The Secretary maintained the Board's outletter book and the minute book; the Accountant kept the general ledger against which the yard ledgers were audited quarterly; the Clerk of the Cheque and the Cashier managed the flow of bills and cash. Two dozen clerks at Somerset Place and, at each of the three yards, a similar establishment under the Storekeeper conducted the routine business. The Board's productive establishment, at the three yards, ran to about two thousand men; by the end of 1794, it had passed three thousand, and by the peak of the war it had reached, on Knight and Wilcox's reconstruction, a figure over eight thousand together with the seasonal draft of coopers and slaughtermen taken on at the autumn kill. In direct employment the Board was among the largest employers in the British state, exceeding in numbers the Ordnance Board's arsenals and the Post Office and rivalling any private manufacturing concern of the period. When the Board's contract network is added

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<sup>19</sup>Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815"; Victualling Board, "Victualling Board Out-Letters, 1793-1815."

<sup>20</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Minutes, 1793-1815."

to the direct establishment, the number of persons whose livelihood came from the Board's operations approached, on the higher of Knight and Wilcox's estimates, a hundred thousand by the middle years of the war.<sup>21</sup>

### **By the end of 1794**

By the end of 1794 the outcome was in place. The three yards had absorbed a fourfold increase in the fleet's demand for beer and biscuit without breaking their delivery schedules to Portsmouth, Plymouth, Torbay, and Cork. The Board's contract network had extended into new counties for beef and butter and into new merchant houses in the Baltic and the Mediterranean for cereal grain and for salt. Contract volume in 1794, as reconstructed from the Board's ledgers, was more than three times the peacetime average and continued to rise into 1795 as the Mediterranean fleet was fitted out under Hotham and Jervis and as the West Indies operations under Jervis, Grey, and, later, Abercromby drew on the Board's stocks for provisions shipped in bulk to the tropical stations.<sup>22</sup> The Storekeeper at Portsmouth, in a return of 1794, reported the yard establishment at over a thousand men; the Storekeeper at Deptford's establishment approached fifteen hundred by the same date. The Board's clerkly staff at Somerset Place had doubled from twenty-four to forty-eight, and a second undersecretary had been added to keep pace with the Comptroller's correspondence.

The scale of the operation carried a political weight the Board had not previously borne. The Commissioners' correspondence with the Admiralty, previously confined to the technical questions of ration composition and yard establishment, extended in 1794 to the disposition of the fleet and the setting of contract prices in the market. The Board's contract prices, taken by tender, set an effective floor for the wholesale grain and beef markets in London, in the Solent, and in Plymouth; when the Board raised the price at which it would contract for wheat in a particular quarter, the merchant houses in Mark Lane took notice, and the price in the wider market moved with the Board's.<sup>23</sup> Brewer's description of the eighteenth-century fiscal-military state as an administrative apparatus of unusual density, capable of extracting revenue and disposing of expenditure at a scale the states of the continent could not match, is nowhere more visible than in the Victualling Board's operations of 1794.<sup>24</sup>

The Comptroller's minute of December 1794 reported to the Board that the yards had, in the course of the year, issued provisions for over twenty-four million rations at sea, in a fleet numbering, at the year's average, about eighty-two thousand men, and had let contracts for the coming year at a total value of over one and a quarter million pounds, or between five and six percent of the Ordinary revenue of the state and about ten percent of the annual naval estimate. The Board of Victualling had become, within eighteen months of the outbreak of the war, the largest industrial and contracting enterprise the British state had ever operated.

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<sup>21</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>22</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>23</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>24</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

Whether it could produce and ship, at that scale and beyond it, the food the fleet ate was the question the ration issues of the yards' second wartime year answered.<sup>25</sup>

## Chapter 2. 1794: Beer, biscuit, and salt beef

### The brewhouse at Deptford, spring 1794

At Deptford in the middle of March, 1794, the brewhouse ran two mashes a day and, on days of high pressure from the fleet, three. The mash-tun took a charge of about fourteen quarters of malt at a mashing; the copper below the mash-tun boiled the wort with a proportion of hops appropriate to the type of beer being brewed; the fermenting rooms above held the running beer for four to six days before racking into butts of fifty-four gallons for issue. The Board's beer for the fleet was not a beer a discerning tavern-going Londoner would have taken by choice. It was a small beer of about three or three and a half percent alcohol by volume, brewed with less hops and less malt per barrel than the beer of the London commercial trade, and preserved by a re-boiling of the wort that yielded a beverage stable enough to survive several weeks in the cask at sea without turning. The brewhouse at Deptford, working double shifts, produced in 1794 something over three million gallons of beer for the fleet; the Portsmouth and Plymouth brewhouses, working under similar pressure, produced between them a further two and a half million. The total approached six million gallons across the three yards: a scale of production the Board had not approached in peace and that its peacetime establishment, defended piecemeal against Treasury reduction through the 1780s, had only partly anticipated<sup>26</sup>.<sup>27</sup>

The seaman's daily beer ration was a gallon. On a first-rate at wartime complement, that made about eight hundred gallons of beer a day; a four-month cruise required over ninety thousand gallons; a Channel-fleet season, for a squadron of twenty of the line and their frigates, could carry a demand for two million gallons. The Board's provision of that quantity was, at bottom, an industrial problem in serial production. The mash-tuns did not stop except for Sunday and for the cleaning of the vessels between one class of beer and another. The coopers at the yard were the choke-point in every quarter of 1794, and the Storekeeper at Deptford's letters to the Board are, in the aggregate, dominated by requests for licence to hire additional coopering hands, for the assignment of additional labourers to the transport of casks from cooperage to brewhouse, and for the release of casks held elsewhere in the yard for other classes of provision. The Board's answer, in the minutes for the spring of 1794, was to acquire empty casks from the Ordnance Board and from the wine merchants of the City, to hire additional coopers at the wartime rate of a shilling and sixpence a day, and to press the resident coopering staff to a rate of production the peacetime standards did not contemplate.<sup>28</sup>

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<sup>25</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>26</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>27</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>28</sup>Victualling Board, "Victualling Board Out-Letters, 1793-1815"; Victualling Board, "Victualling Board Minutes, 1793-1815."

## The bakery and the biscuit

The ship's biscuit that the seaman ate at his mess table was not the article a modern reader might understand under the name. It was a dry, hard, twice-baked flatbread, about three inches across and half an inch thick, of a colour between wheat and grey, and of a hardness that required soaking in gravy or in the sailor's grog before it could be chewed at all. The Board's biscuit was baked from wheat flour of an approved standard, ground at London and Portsmouth mills under contract to the Board or, in a proportion of the wartime production, at the Board's own mills at Deptford and Rotherhithe, and blended with pea flour in a variable proportion. The recipe was standardised in the Board's contracts and enforced at the yards by the resident bakers, who worked in shifts as long as the brewers did and whose ovens ran, at wartime peak, from four in the morning until midnight. Portsmouth's bakery, on the accounts of 1794, produced between twenty-eight and thirty-two thousand pounds' weight of biscuit a day; Plymouth's produced between eighteen and twenty-two thousand; Deptford, whose biscuit went principally to the Nore and to the ships fitting on the Thames, produced between twelve and sixteen thousand; the three yards together produced, over the year, something over twenty million pounds' weight for issue to the fleet.<sup>29</sup>

The biscuit ration was a pound a day per man. On the fleet strengths of 1794, the yards baked at approximately the rate the fleet ate at, with a reserve at each yard sufficient for about six weeks' issue at wartime scale. The reserve disciplined the operation: biscuit that fell below the reserve level triggered an increase in shifts at the bakery, and biscuit that rose above it, when fleet strength dropped between operations, released bakers and labourers for cooperage or for salting. Contract flour that fell below the Board's standard on inspection at the yard was returned to the miller, at a rebate of the yard's choosing or at the miller's cost; the correspondence in ADM 110 shows the Storekeepers at Portsmouth and Plymouth exercising, on the Board's authority, a discipline over the contract mills that had no peacetime equivalent and that Knight and Wilcox have described as the effective quality control of the wartime bakery.<sup>30</sup>

## The salting-house and the autumn kill

Salted beef and salted pork were the seaman's animal protein and were produced during a defined kill season each autumn. The Board's contracts for live cattle and hogs were let in July and August for delivery to Deptford, Portsmouth, and Plymouth between September and the middle of December. The kill at Deptford in 1794, on Knight and Wilcox's reconstruction of the ledger returns, was about seventeen thousand head of cattle and about twenty-two thousand hogs; Portsmouth and Plymouth killed at about half those rates each. The kill of 1794 was the largest in the Board's history to that date.<sup>31</sup> The animals came, principally, from

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<sup>29</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>30</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Out-Letters, 1793-1815."

<sup>31</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

Ireland by way of the ports at Cork and Waterford, from the Welsh Marches and the West Country, and, in the case of the Deptford kill, from London Smithfield. The Irish contribution was substantial: Knight and Wilcox estimate that Ireland supplied between forty and fifty percent of the beef issued to the fleet in the wartime years, a fraction of the ration that gave the Irish grazier interest a stake in the Board's contracts and made the Board, in effect, one of the largest single purchasers in an Irish agricultural economy that was already organised, under the constraints of the Union relationship, around the export of cattle and provisions to Britain rather than around the needs of Irish tenants. The contract books at ADM 112 record the standing agreements with named merchants at Cork whose contracts ran for the duration of the war; they do not extend down to the labour that raised, drove, and slaughtered the cattle, and that gap remains open.<sup>32</sup>

The kill itself, at the yards, was a matter of muscle, of blood, of salt, and of the cooper's hoop. The animals were killed at the slaughterhouse, dressed by the yard's slaughtermen, and cut into pieces of four and eight pounds' weight for pickling. The pieces were laid in salt in wooden tubs for a first cure of several days, then packed into casks of a standard size with an additional charge of salt and, sometimes, of saltpetre and, on the Board's specification since the 1770s, of a small measure of brown sugar. The cask was closed, marked with the yard's brand and the date, and stored under a shed at the yard until called for. The salted beef and pork of a good cure would keep, in the cask and out of the sun, for two years or more; the Board's contracts specified a minimum keep of eighteen months and a shipboard turnover the ship's steward's book at sea was to record. The salt itself came in bulk from the Cheshire salt-works at Northwich and from the Mediterranean at Setúbal and at Ibiza, and the Board's contracts for salt in the years of the long war are a small but consequential class in ADM 112.<sup>33</sup>

### **Inspection at the loading dock**

Every parcel of provisions that entered the fleet did so under the eye of one of the Board's inspectors. Beer was tasted and its strength assessed against a standard; biscuit was broken and inspected for damp and for insect infestation; salted meat was cut into and inspected for the character of the cure and the condition of the flesh; oatmeal was rubbed between the fingers and, in cases of doubt, weighed against the standard weight per gallon in the Board's rule book. The receiving purser, standing at the inspector's side, entered the accepted parcels in the ship's fourth-part inventory book and countersigned the entry with his initials. A parcel rejected at inspection was returned to the contractor for replacement or was rebated at a rate the inspector was authorised to allow.<sup>34</sup>

The inspector's authority at the yard was substantial in principle and moderated by local need. A rebate on a marginal cask might be accepted; rejection of a large delivery when stocks were low could expose the yard to a shortfall. Knight and Wilcox's reconstruction of the

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<sup>32</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>33</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>34</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Victualling Board, "Victualling Board Out-Letters, 1793-1815."

correspondence shows inspectors accepting some below-standard beef and flour at reduced rates when immediate replacement was impractical. The system had workable discipline without producing a uniformly high article, and the ration issued at the yard sometimes fell below the ration promised in the contract.<sup>35</sup>

### **The ration on paper and the ration at sea**

The seaman's daily ration in the Regulations was fixed at a pound of biscuit, a gallon of beer, a specified allowance of beef or pork on days of issue, an allowance of butter, cheese, oatmeal, peas, and, on the establishment prevailing in 1794, half a pint of vinegar. The rate at which beef and pork were served alternated through the week, and the substitutions permitted when a stock ran short were set out in the Regulations. The paper ration was uniform across the fleet and constant across the year; the ration at sea was neither. The ships' books that ADM 112 and the Navy Records Society's published volumes preserve for the wartime years show, in the aggregate, that local substitution was the norm rather than the exception. A ship on Channel service in October 1794 would receive its beef and pork at approximately the Regulations' rates; a ship in the Mediterranean by the same date would be drawing a proportion of its beef against fresh purchase from a Sicilian or Neapolitan supplier under a warrant from the resident agent, and the balance of its cheese and butter would be Italian or Genoese rather than Cheshire or Cornish.<sup>36</sup> A ship in the West Indies, at Antigua or Barbados, would take its bread and salt beef from the Board's shipments and its fresh purchase, on issue days, from the local market at a warrant rate agreed with the resident agent-victualler.

The character of the substitutions is not evidence of a failure of the Board's system; it is evidence of the system's ordinary operation. The Board's Regulations set the standard against which local purchase was measured; the purser entered the substituted item at the equivalent value in the ship's book, drew a warrant on the Board, and the Board reconciled the warrant in the quarterly account. Macdonald's reconstruction of the operational ration on the ships whose books she has read is closer to the paper ration in nutritive value than the paper ration is to the seaman's complaint literature of the period, and the difference is largely accounted for by the honest recording of substitution as substitution. Rodger has taken the same view on the aggregate figure and has argued, against a persistent tradition of complaint-driven writing on the Board, that the wartime ration was, on the whole, at or near the standard set on paper.<sup>37</sup>

### **The scale and its strategic weight**

The Board issued, in the course of 1794, provisions for approximately twenty-six million rations at sea, at a delivered cost, before the discount taken on the paper by the market, of approximately one and a quarter million pounds. The fleet the Board fed averaged, over the year, about eighty-two thousand seamen at sea and increased to over a hundred thousand

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<sup>35</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>36</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>37</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

by the middle of the year. The Board's establishment at the yards approached four thousand direct employees; its contract network approached, on Knight and Wilcox's higher estimate, sixty thousand persons whose livelihood, in whole or in part, came from the Board's contracts. The French Republic in the same year fitted out and provisioned a Channel fleet at Brest, Rochefort, and Lorient at a nominal strength of about forty-five ships of the line, on a supply that was intermittent, poorly stocked at biscuit and salt beef, and, at the outbreak of the June action against Howe, dependent on the arrival of a grain convoy from Chesapeake Bay that the Channel Fleet had put to sea to intercept.<sup>38</sup> No comparable reconstruction exists for Spanish or Dutch provisioning in the same year; the comparison stops at France, where Rodger's and Morriss's use of the French naval archives supports it.<sup>39</sup>

The strategic weight of the disparity fell, at first, on the operational picture in the Channel. Howe's fleet on the Ushant station could hold the sea, in June of 1794, for the six weeks required to intercept and engage Villaret-Joyeuse's fleet; the French Channel Fleet could not have held the sea for six weeks even without an engagement, because its brief was to convoy a merchant fleet whose arrival was a matter of state survival. The Board's provisioning of Howe was not a subsidiary detail of the campaign; it was the enabling condition of the campaign. Every day Howe held the sea was a day the yards had brewed, baked, killed, salted, coopered, inspected, and shipped his ration in advance of his consumption, at a rate the French intendants could not match. The victory of the First of June was the visible outcome; the industrial capacity that had put the fleet at the station to fight it was not.<sup>40</sup>

## Chapter 3. 1795: Lemon juice made general issue

### What was known, and what was recommended

The antiscorbutic property of citrus juice was not a discovery of the 1790s. Lind's *Treatise* of 1753 had demonstrated it forty years before, in a controlled trial on board the *Salisbury* in 1747; the property itself had been noted, in a less rigorous form, by ships' surgeons for a century before Lind. Blane's *Observations on the Diseases of Seamen*, published in 1785, drawing on his service as physician to the West Indies fleet under Rodney, extended the demonstration to a fleet at scale and pressed the Admiralty and the Sick and Hurt Board for a general issue through the closing years of the American war. Trotter's *Medicina Nautica* gathered the trial data of the 1790s, including a run of trials Trotter himself made in 1794 with the Channel Fleet and a trial made independently by the surgeon of the *Suffolk* on Admiral Rainier's outward-bound voyage to the East Indies. By the time the Sick and Hurt Board acted, the medical case for citrus was settled literature, not a live scientific question.<sup>41</sup>

The recommendation followed on 5 March 1795. The Commissioners for the Care of Sick and Wounded Seamen, in a memorandum forwarded to the Admiralty and endorsed at the Board

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<sup>38</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>39</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>40</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>41</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

of Victualling in the following days, ordered that lemon juice be issued to every seaman on daily rate from the second month of a foreign voyage, at a proportion of two thirds of an ounce of juice mixed with two ounces of sugar, and directed the Board of Victualling to provide the article at the yards for embarkation. The interval between the demonstration and the recommendation (forty-two years from Lind's trial, ten from Blane's book) is not accounted for by a slow acceptance of the medical case, which had not been seriously contested since the 1780s. What the recommendation required, and what the medical writers had not had to supply, was an article deliverable to the seaman's mess at a distance of thousands of miles from the Mediterranean, at the scale a fleet in general commission consumed, and at a keeping quality that survived a Channel winter, an Atlantic passage, and a tropical summer in the cask. That requirement was a procurement problem, and it belonged to the Victualling Board.<sup>42</sup>

## Procurement

Lemon juice at the scale the general issue of 1795 required could not be obtained in the English market. The fleet in commission at the middle of 1795 was above ninety thousand seamen at sea; the proposed issue worked out at about twenty-five thousand imperial gallons of juice a year at that establishment, rising with the fleet's growth. English orchards supplied nothing at that scale; the West Indies estates, which supplied the sugar with which the juice was mixed, produced limes but not lemons at the desired quality; the Mediterranean orchards, principally in Sicily and southern Italy, produced lemons at prices and volumes the Board's contract office could reach. The Board's contracts for lemon juice from 1795 forward ran principally to Sicilian houses at Messina and Palermo and, in the earlier years, to London merchant houses trading in Mediterranean produce.<sup>43</sup>

The juice was pressed in Sicily, filtered, and shipped in casks of a specified size to Portsmouth and Deptford. The Board's specification required a juice of a defined acidity, free from added water and from any preservative the medical writers had not approved. The Board's inspectors at Portsmouth and Deptford tasted each delivery for acidity, checked the cask against the specified size, and rejected or rebated deliveries that failed on either count: a delivery from a Palermo house arrived below the specified acidity and was accepted at a rebate of a shilling in the gallon; a delivery from a Messina house was rejected outright for the addition of sea-water and returned to the shipper at his cost.<sup>44</sup>

## Preservation

The preservation of the juice at sea was a problem the medical writers had partially answered and that the Board's coopers finished answering. The coopers packed the juice in wooden casks lined with a preparation the yard's ordinary casking procedure had not previously used. On the ships' books Macdonald has consulted and on the aggregate returns Knight and Wilcox have reconstructed, the keeping quality of the article was substantially better than

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<sup>42</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>43</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>44</sup>Victualling Board, "Victualling Board Out-Letters, 1793-1815."

that of any other fresh or semi-fresh article the Board had put to sea before 1795. It kept, in the cask and out of the sun, for the year of a foreign voyage; it did not keep for two years, and the Board's provisioning of the East Indies and the more distant Pacific stations required the return of empty casks and the fresh embarkation of new juice at the intermediate stations at the Cape and at Ceylon in later years.<sup>45</sup>

## Issue

The order of March 1795 was carried into effect at the mess table by a sequence of administrative acts, not by the medical writers or the Sick and Hurt Board directly. The Comptroller of Victualling entered the order in the Board's minute book; the Chairman signed a standing order to the yards requiring the entry of lemon juice in the provisioning of every ship on foreign service; the contract office issued a tender for the article at scale, and by the middle of 1795 the first contracts with Sicilian and London Mediterranean houses had been let; the inspectors at the yards were furnished with the specification and a rebate schedule; the storekeepers entered the article in the yard's stock book and reported the weekly stock and issue to the Board.<sup>46</sup> The pursers of ships fitting for foreign service were furnished, by the middle of 1795, with a printed instruction on the daily issue and a warrant for its entry in the fourth-part book. The daily mixing of juice with sugar and water was done at the ship's steward's room, under the surgeon's or the surgeon's mate's oversight in most ships; the steward's book carried the daily issue at the standard rate and, on the ships whose books have survived, the occasional substitution of rum for sugar or of lime juice for lemon juice where a delivery had failed.<sup>47</sup>

Not one of these acts was, in itself, a medical judgement. The medical judgement had been made at the Sick and Hurt Board and, before that, in the wards of the naval hospitals at Haslar and Plymouth and in the surgeons' logs of a generation of ships. The passage from that judgement to the seaman's mess was, in every step, a matter of contract, specification, inspection, stock control, and the entry of an article in a book: the ordinary machinery of the Board's operations applied to a new class of provision.

## Compliance and incidence

The general issue was not, in its first years, uniformly effective at every station, and the shortfall was a matter of compliance rather than supply. Ships whose commanders declined to enforce the daily issue, ships whose juice had failed in the cask, and ships whose voyages exceeded the keeping quality of the delivered article all suffered scurvy at rates above the fleet average through the second half of the 1790s. The Board's answer to the last of these was, by 1798 and 1799, the establishment of intermediate re-supply at the Cape and at Madras, which extended the article's operating range to the East Indies station and, by 1801, to the Pacific. The residual scurvy in the fleet after 1800 was, in the aggregate, a problem of enforcement

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<sup>45</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>46</sup>Victualling Board, "Victualling Board Minutes, 1793-1815"; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>47</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

at the ship's mess rather than of supply from the Board: the article was reaching the yard and the ship's steward's room, and its consumption at the mess was the local commanding officer's responsibility.<sup>48</sup>

Macdonald has read a proportion of the ships' books and hospital returns and reports a sharp fall in the incidence of scurvy in the fleet between the years before 1795 and the years 1795 to 1800; Rodger, on a wider reading of the aggregate returns, reports a fall of a similar order and attributes it, in due proportion, to the general issue of lemon juice, to the improvement of victualling generally, and to a small residual improvement in the ration's other components.<sup>49</sup> Neither reconstruction states the fraction of the earlier and later rates on a common, page-cited denominator (men-years at risk, hospital admissions per thousand borne, or an equivalent measure held constant across both periods), and a precise ratio is not asserted here; what the sources support is a decline of real and substantial size, not a specific multiple of it. The immediate operational effect, on either reading, was to remove scurvy as a first-order constraint on the ranges at which the fleet could operate. Squadrons could stay at sea for six months, for eight, for ten, and, on the closer blockades, for over a year, with no more than the ordinary requirement of watering and revictualling.

### **An administrative contribution, not a second hero**

The naval and medical historiography has given the credit for the conquest of scurvy to Lind, Blane, and Trotter, and the credit is not misplaced: the physicians made the scientific case, and made it well, against a medical opinion in which the antiscorbutic property of citrus was well known but not accepted as the ground of a general issue. What the physicians did not do, and could not have done from the naval hospital or the ship's surgeon's berth, was contract for the juice at the scale a fleet in general commission required, preserve it through a foreign voyage, and enter it in a stock book at three yards simultaneously. That is a different kind of work, not a competing claim to the same credit. The forty-two years between Lind's demonstration and the general issue are accounted for, in substantial part, by the absence of an apparatus that could do that work, not by any slowness in accepting Lind's result. The apparatus that closed the interval in 1795 was the same one that had produced the fleet's beer, biscuit, and salt beef; the addition of lemon juice was of a piece with the rest of its business, and its significance lies in what it removed as an operational constraint, not in a transfer of heroism from the physicians to the Board.

## **Chapter 4. 1798: The victualling bill as circulating paper**

### **The instrument at the Board's office**

A victualling bill of the standing form in use in the middle of 1798 was a printed form, filled out at the yard's office in a clerkly hand, drawn on the Board of Victualling at Somerset Place and made payable to a named contractor, or more usually to the contractor's order,

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<sup>48</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>49</sup>Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

at ninety days from the date on the bill. The face of the instrument carried a distinctive numbered register entry keyed to a bill-register kept at the yard; the countersignature of the Board's inspector on the reverse acknowledged receipt of the goods to which the bill's value corresponded; the endorsement of the Board's Comptroller, or of an officer authorised to sign on his behalf, formalised the state's obligation.<sup>50</sup>

What the instrument was, in strict legal terms, is a narrower question than it looks. It functioned, in practice, as a form of assignable public paper: drawn by an agent of the Crown on a public department for value received, negotiable by endorsement, and taken in the discount market as a distinct but closely related class to the navy bill the Navy Board drew for wages and stores. Whether a victualling bill met the strict legal definition of a bill of exchange, whether it should be classed with the Exchequer's own bills and departmental warrants, or whether it occupied a form of its own, is instrument-level legal and archival work that remains to be done; the bill is described at the level the cited scholarship supports, as assignable, discountable public paper carrying the state's credit, without the stricter classification.<sup>51</sup>

A victualling bill in 1798 for a modest yard delivery might carry a face value of a few hundred pounds; a bill for a large contract, closed on the delivery of an autumn kill or a shipment of Baltic wheat, might carry a face value of several thousand. The Board drew, in 1798, victualling bills to an aggregate face value on the order of one and a half million pounds a year, and the Navy Board, in the same year, drew navy bills for wages and stores to an aggregate face value approaching six or seven million. The two boards' paper together constituted a substantial fraction of the traded volume of the London discount market as a whole.<sup>52</sup> The victualling bill was the smaller and less liquid instrument of the two through the middle 1790s; the Board's practice from that point forward was to bring its terms closer to the navy bill's, so that by the end of the war the two classes of paper traded at close to the same discount and were treated, in the aggregate, as a single class of state paper.<sup>53</sup>

### **The contractor's use of the paper**

The contractor who received the bill had two ordinary uses for it. The first was to hold it to maturity and present it, at ninety days, at the Board's office or the Treasury for cash payment; small contractors, and larger contractors when the discount market was quiet, took this course. The second was to discount the bill in the market. The London discount market of the 1790s and 1800s included the Bank of England, the private banks of the City and the West End, a growing body of discount houses specialising in the two-name and three-name paper the market classified separately, and, at its outer edge, brokers and factors who moved paper between the private banks and the discount houses. The bill carried, at the point of

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<sup>50</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>51</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>52</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>53</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

discount, an endorsement by the contractor to the discounter and, in some cases, a further endorsement to a second buyer before maturity.<sup>54</sup>

The aggregate discount at which victualling and navy bills moved, on the published summaries in Knight and Wilcox and in Brewer, ran between one and a half and three percent per annum for the standing paper of the Board through most of the middle war years, and rose to four and five percent in the disturbed paper of 1797 and of the closing months of 1810.<sup>55</sup> The Bank of England's own rate on the paper it took was typically a quarter or a half percent below the wider market rate, and the Bank's willingness to hold the paper in size set an effective ceiling on the market's discount. These are aggregate market figures, not a reconstruction of individual bills.

### **What the paper did at the loading dock**

The operational effect of the arrangement was to bring the state's borrowing capacity to bear on the contractor's working capital at the moment that capital was under greatest strain. A contractor whose delivery had been received at Deptford, and whose bill for it had been drawn the same day, could present the bill at a City discount house within a day or two and receive, in cash or in the discount house's own note, an advance of approximately nine hundred and eighty pounds on a bill of a thousand pounds' face value at ninety days. The advance was, in effect, drawn from the state's credit at the market rate of interest, less the discounter's charge. The contractor turned the money into the wheat, malt, hops, or beef for the next delivery; the discounter held the bill to maturity, or resold it, and drew the face value from the Board or the Treasury when it fell due.<sup>56</sup>

The wider consequence follows from the arrangement's cumulative operation over the years of the long war. The Board of Victualling, at the aggregate scale of its contracts after 1798, was one of the largest single generators of two-name paper in the London discount market; the Navy Board, in the same years, was a larger one. The paper the two boards drew, together with the paper of the Ordnance Board and the Transport Board, constituted the greater part of the government's short-term borrowing at the loading dock. The Bank of England, relieved by the Restriction Act of 1797 of the obligation to redeem its notes in specie, took the state's paper in size at the Bank's own discount and held the state's short-term borrowing on its own balance sheet at a level the pre-1797 practice would not have permitted. Brewer's argument in *The Sinews of Power*, that Britain's borrowing capacity was the material condition of its wartime performance, extends into the Napoleonic decades in this specific form: the state's borrowing capacity reached the loading dock as a paper instrument the contractor could discount at a house in the City, and the contractor's working capital, at the moment of the

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<sup>54</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Bank of England, "Discount Books for Navy and Victualling Bills, 1795-1815," Bank of England Archive, 1795.

<sup>55</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>56</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

next delivery, was that borrowing capacity in operating form<sup>57</sup>.<sup>58</sup>

### **The 1797 suspension and the paper's response**

The Bank Restriction Act of February 1797, which suspended the Bank's obligation to pay its notes in specie and set the framework of the paper pound that ran to 1821, might have been expected to depress the standing of the state's paper. On the reconstruction in Brewer and in Knight and Wilcox, the market's response was more moderate than a strict monetary reading would predict: the paper of the two boards fell to a wider discount in the first weeks of 1797 and, through the spring and summer, rose again to a rate not much different from the pre-Restriction rate. The confidence the market retained rested on the Bank's own willingness to take the paper at its discount and on the Treasury's arrangements for redeeming it at maturity from ordinary revenue. A contractor at Cork in the spring of 1797, holding a victualling bill at ninety days from Portsmouth, could discount it in London at a rate that had risen by less than a percentage point over the pre-Restriction rate; the Board's contracts continued at the standard terms, and the fleet's ration was not disturbed.<sup>59</sup>

### **The paper at the operational range of the fleet**

Cornwallis's blockade of Brest, between 1798 and 1801 and again after 1803, required the continuous re-provisioning of a squadron on station at the western entrance of the Channel through winter and summer. The Board's re-provisioning of the squadron was done through running contracts placed by tender at Plymouth, delivered by attendant victualling vessels.<sup>60</sup> The bills drawn against those contracts were of the ordinary form, drawn at Plymouth's yard office and given to the contractor's clerk on delivery day. The contractor, whose merchandise had reached the squadron by a supply line running from Cork or the Baltic, discounted the bill at a Plymouth banking house that maintained an account with a London discount house for the purpose; the discount at Plymouth was, on Knight and Wilcox's aggregate figures, within a quarter of a percent of the London rate, the local market being shallow but closely mediated by the London one.<sup>61</sup>

The chain is worth naming in full. Cornwallis's squadron at Ushant, on station through a winter cruise, was fed at a rate its captains reported adequate and at a health no French Channel squadron on the corresponding station could match. That delivery rested on the yard's stock; the yard's stock rested on the yard's contracts; the yard's contracts rested on the contractor's willingness to enter them on the standing terms; and the contractor's willingness rested on the paper instrument the Board drew and the contractor discounted at a Plymouth or London house. The blockade of Brest was won, at its administrative and

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<sup>57</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>58</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>59</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

<sup>60</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>61</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

financial base, by the operation of the discount market on the state's paper.<sup>62</sup>

### **An instrument the earlier centuries had lacked**

Logistics in earlier state operations had rested on cash, plunder, personal credit, requisition, or a combination of the four. The Bourbon monarchy under Louis XIV had developed a considerable naval intendency and had provisioned a considerable fleet by contract, but the Bourbon state's paper had not, in the eighteenth century, achieved the wide market acceptance the British navy and victualling bills achieved in the 1790s and 1800s. Rodger, drawing on Riley and on the French naval archives, has estimated the French naval provisioning of the Directory and Empire years at not more than a third of the British scale in comparable years.<sup>63</sup> The material limit was not, in the main, the productive capacity of France; it was the absence of a paper instrument that could bring the state's borrowing capacity to the French loading dock at the moment the contract required it. A French contractor at Brest who took a state paper for a delivery of beef or wheat took an instrument that discounted, in the aggregate, at rates several times the discount at which the corresponding British paper moved; his working capital, and his willingness to enter further contracts, were reduced accordingly, and the state's provisioning fell short by the corresponding margin. This is the one rival comparison the cited scholarship supports at any specificity; it does not extend to Spain or the Dutch Republic, and the argument is not pressed beyond France.<sup>64</sup>

## **Chapter 5. 1805: Blockade duty and long-range provisioning**

### **The Ushant station in the spring of 1805**

The Channel Fleet under Cornwallis lay on the Ushant station through the winter of 1804 and into the spring of 1805 in a state of continuous readiness that no earlier British squadron had sustained. The station stood at the western entrance to the Channel between Ushant and the Bec du Raz and covered the passage between Brest and the Atlantic. The squadron numbered between eighteen and twenty-four sail of the line, according to the disposition of the moment, with attached frigates and a rotation of small vessels for lookout and dispatch. The ordinary strength on station in the spring of 1805 was about twenty-two sail of the line at any given day; the total complement, seamen and marines, was in the range of eighteen thousand men. At the stated daily ration, that complement required about eighteen thousand pounds of biscuit and eighteen thousand gallons of small beer each day, or roughly 126,000 gallons of beer a week, together with salted meat, smaller ration items, and lemon juice with sugar and water.<sup>65</sup>

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<sup>62</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>63</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>64</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>65</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

The Board's provisioning of Cornwallis's squadron in the spring of 1805 was, at the yard, the responsibility of the Storekeeper at Plymouth. The daily letters between Cornwallis at sea, the Admiral's secretary, the Port Admiral at Plymouth, the Storekeeper of the yard, and the resident agent-victualler at Plymouth carry the running business of the operation. The victualling vessels attached to the squadron, which numbered between two and five at any moment, were ordinary merchant hulls chartered by the Board and given a warrant of the Board for the voyage. The vessels carried, from Plymouth to the station, the biscuit and salt beef from the Board's stock at the yard, the beer from the yard's brewhouse, and the balance of the smaller items of the ration; they returned, on the reverse leg, with the empty casks from the previous provisioning, with the ship's discharged sick, and, occasionally, with dispatches for the Admiralty and for the Port Admiral. The station's continuous provisioning at the level named required about one victualling voyage a week on the round trip from Plymouth, in weather that allowed a voyage; in the storm-driven weeks of a Channel winter the voyages were fewer, and the squadron drew, at those times, on the reserve stored at the yard and shipped in a heavier round trip when the weather cleared.<sup>66</sup>

### **The aggregate figures and the ship's log**

The aggregate figures are of the sort the Board's returns are best at supplying. A Plymouth return summarized an average of 6,200 daily rations charged to that yard's Ushant account and expressed the remaining stock as weeks at the same issue rate. That account covered issues from Plymouth, not the squadron's full eighteen-thousand-man complement, which also consumed provisions already aboard and supplies moving through other channels. The figure measures one yard's throughput and cannot be substituted for fleet headcount.<sup>67</sup>

The ship's log tells a partially different story. Cornwallis's flag ship *Ville de Paris*, on the working of its ship's log for the days of the second half of April, 1805, was in continuous cruising order and was fed at the daily rate the Regulations set out. Two of Cornwallis's ships of the line, the *Prince of Wales* and the *Malta*, on the working of their logs for the same days, were fed at a rate slightly below the daily rate: the beer issue was reduced by an eighth on a day the victualling vessel had failed to arrive; the biscuit issue was made from a stock at the ship's steward's room that had been reduced by insect infestation and rebated at the Board's rate at the yard on the previous provisioning. A frigate detached to Torbay for water and coal reported, in the same week, that its salt beef had failed on the last cask opened at the mess and that a fresh purchase at Torbay had been made against a warrant on the Board. The Board's aggregate figures did not disclose the *Prince of Wales*'s eighth reduction in the beer issue or the frigate's rebate on the failed cask of beef. The ship's log did.<sup>68</sup>

Neither of the two views is false and neither is complete. The Board's aggregate figures record the yard's issues and the aggregate ration; the ships' logs record the ration at the mess on the day and the ordinary substitutions and reductions that the aggregate does not. The

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<sup>66</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Victualling Board, "Victualling Board Out-Letters, 1793-1815."

<sup>67</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>68</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

picture the two together present is of a provisioning that was, at the ordinary aggregate, at or near the Regulations' standard and, at the ship-day level, subject to a class of ordinary substitutions and reductions the Board's system was designed to accommodate. Rodger, on the aggregate returns and on a wide reading of the ships' logs, has argued that the ordinary level of provisioning on the Ushant station in the years after 1798 was at or above the Regulations' standard on the aggregate and was, on the ship-day, subject to a small margin of ordinary substitution. The ship's log does not displace the aggregate: the aggregate sustained the squadron's endurance, and the daily substitution belonged to the ordinary discipline at the mess.<sup>69</sup>

### **The Mediterranean cruise of Nelson, 1803 to 1805**

Nelson's command of the Mediterranean between the resumption of the war in 1803 and the reopening of the campaign that ended at Trafalgar in October 1805 covered a squadron of ten to fourteen sail of the line, with attached frigates and cruisers, at ranges that no British Mediterranean command had previously sustained without a base. Nelson had no port between Gibraltar at the western entrance of the sea and Malta at its centre; his ordinary base of victualling was the ships themselves, restocked by attendant victuallers dispatched from Malta and from Gibraltar and by fresh purchase from the Sicilian and Sardinian ports under warrants of the resident agent.<sup>70</sup> The squadron's operational range through the middle of the war rested on a combination of the Board's shipped provisioning from home yards, the intermediate re-supply at Malta, the fresh purchase in the Mediterranean, and the ordinary substitution of local for standard items where the local supply was sufficient. Nelson's letters to the Board and to the Admiralty on the health and the provisioning of his squadron carry, through the two-year cruise, an unusual level of tactical detail on the arrangements at the ships' messes, and Nelson's insistence on the daily issue of lemon juice at the standard rate contributed to a scurvy incidence in his squadron that fell, at the end of the two years, to a fraction of the earlier Mediterranean average.<sup>71</sup>

The specific stations at which the Mediterranean provisioning was worked out are named in Knight and Wilcox and are worth setting out here. Malta, under a resident agent, held a stock of biscuit, beer, salted meat, oatmeal, and the smaller items of the ration, together with a small reserve of lemon juice for issue to squadrons passing on cruise. Gibraltar, under a separate resident agent, held a smaller stock and served principally the ships entering or leaving the sea. The Sicilian ports at Palermo and Messina, under standing warrants of the resident agent at Malta, delivered lemons, wine, and fresh beef and pork on a running warrant against the Board's paper. The Sardinian ports at Cagliari and Alghero delivered a smaller quantity of the same articles. Each station's provisioning was, in effect, a contract-and-warrant operation like the Board's yard-and-contract operation at home, on a smaller scale and with a shorter chain of authority; the resident agent at each station reported to the

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<sup>69</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

<sup>70</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>71</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*.

Board through the Storekeeper of the nearest home yard, and the accounts were reconciled at Somerset Place in the quarterly audit.<sup>72</sup>

### **The West Indies and the East Indies**

The West Indies stations at Jamaica, at English Harbour in Antigua, and at Barbados were provisioned on a mixed system that combined shipped provisioning from home yards, standing warrants for fresh purchase from the local market, and, in the case of the American trade during periods of British neutrality with the United States, contract deliveries of biscuit flour and salt beef from Boston, New York, and Baltimore. Fresh purchase in the West Indies included the vegetables, fruit, and, at some stations, live cattle that the local plantation economies could supply; the resident agent at Jamaica, on the standing warrants of the Board, contracted for the local supply and reconciled the accounts on the ordinary schedule.<sup>73</sup> Those plantation economies were built on enslaved labour: the sugar that carried the fleet's ration of lemon juice, and the produce and cattle purchased at the anchorages under the resident agent's warrants, entered the Board's supply chain from estates worked by enslaved people. What share of a ship's fresh purchase at a given anchorage came from a given estate is not recoverable from the cited material, and the Board's own exposure to that labour stands unquantified rather than estimated. Scurvy on the West Indies stations was, from the middle of the 1790s and more decisively after 1799, held at a low incidence by the general issue of lemon juice and by the fresh vegetables and fruit the local supply made available at the ordinary anchorages.

The East Indies station under Rainier and, later, under Pellew was the most distant of the Board's operations and was provisioned on a lengthened chain of the same character. The Cape of Good Hope, occupied by the British in 1795 and again in 1806, served as an intermediate re-supply point for the intermediate-range supply of biscuit, salt beef, lemon juice, and the smaller items of the ration; Madras, at the far end of the chain, held a resident agent and a stock; Bombay held a smaller establishment. The chain of supply from London to Madras, on the ordinary voyage time of the East India Company's ships and the naval attendant vessels, ran to five or six months in each direction; the working capital tied up in the paper drawn on the Board for the East Indies contracts was, in the aggregate, a small but substantial fraction of the Board's paper obligations at any given moment, and the discount at which the East Indies paper moved in the London market was, on the summaries in Knight and Wilcox, no different from the discount on the Channel and Mediterranean paper. The consequence was operational: a squadron at Madras in 1805, on the East Indies station, was fed by an apparatus whose paper reached back to Somerset Place at the same discount at which the paper of a Plymouth contractor reached the London discount market at the head of the Channel.<sup>74</sup>

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<sup>72</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>73</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*.

<sup>74</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

## **The endurance the arrangement bought**

The endurance the arrangement bought is the fact against which the operational history of the closing years of the long war should be read. Cornwallis's Ushant station between 1803 and 1805 was held continuously through two winters and two summers, at a level of provisioning that supported an operational readiness the pre-1793 fleet had not sustained. Nelson's Mediterranean cruise between the resumption of the war and Trafalgar was held for over two years without a return to a home port. Collingwood, who succeeded Nelson at Trafalgar and held the command at Cadiz and Toulon after 1806, remained at his station until his death at sea in 1810, on a provisioning drawn from Malta, from Gibraltar, and from the standing warrants of the Sicilian and Sardinian stations. The distances at which the fleet operated in the closing decade of the war would not have been sustainable on any earlier state's provisioning apparatus.<sup>75</sup>

Strategically, the range at which the French and Spanish fleets could hope to break out closed. While the British squadrons held their stations, the enemy fleets could put to sea only in the narrow window of a British withdrawal for weather or for storm. The withdrawals were fewer and shorter after 1798 than they had been earlier in the war, and by 1805 the Ushant station was held with a reliability that the French intendants' correspondence, on the summaries in Rodger and in Morriss, treated as a settled feature of the naval geography. Trafalgar was fought on the 21st of October, 1805, at a moment the combined French and Spanish fleet had at last put to sea from Cadiz, under Villeneuve, in a break-out to which the standing British blockade of Cadiz had contributed the operational conditions. The battle was Nelson's tactical decision. The station at which the battle was fought was the outcome of an apparatus whose operating parts were at Deptford, Portsmouth, Plymouth, Malta, Gibraltar, Cork, and, in a smaller way, at every station in the fleet's global reach.

## **The Board's contract network in its wartime maturity**

By the middle of 1805 the Board's contract network at its wartime maturity extended, on the reconstruction in Knight and Wilcox, to over a thousand named merchants under standing or short-term contract at any given moment: in the Baltic, to Danzig, Königsberg, and Riga for wheat and hemp; in the Iberian and Mediterranean regions, to Lisbon, Cadiz, Malaga, Palermo, and Messina for wine, lemons, olive oil, salt, and fresh purchase; in Ireland, to Cork, Waterford, and Belfast for beef, butter, and cheese; in the English counties, to grain merchants at Mark Lane, cattle dealers at Smithfield, and the mills, breweries, and salting-houses of the London and Portsmouth trade; in the West Indies and the American ports, to local merchants and, in periods of American neutrality, Boston, New York, and Baltimore houses; in the East Indies, to houses at Bombay, Madras, and, after 1806, Cape Town.<sup>76</sup> The paper the Board drew on that network's deliveries reached, in aggregate face value, over three million pounds a year at wartime peak, approaching four at the peak of the Peninsular War. The apparatus

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<sup>75</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>76</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

was, in the direct sense, a piece of state infrastructure at the ends of the earth, and its material presence there is what the closing decade of the war rested on.

## **Chapter 6. 1815: The wartime industrial apparatus wound down**

### **The Board's papers at the peace**

The Board of Victualling in the summer of 1815 received the news of Waterloo and the second abdication with, so far as the minutes preserve, the ordinary business of the summer. The June and July minutes at Somerset Place carry the routine of the yard's operations at Deptford, Portsmouth, and Plymouth; the closing of the summer's contracts for beef, butter, and biscuit flour; the discharge of victualling vessels no longer required for the Ushant, Mediterranean, and West Indies stations; and the ordinary sequence of tenders, warrants, and drawings on the Board's paper.<sup>77</sup> The Comptroller's memorandum of the second week of July, on the manning of the fleet after the second peace, projected a reduction from the wartime strength of about a hundred and forty thousand seamen at sea to a peace establishment on the order of twenty-two thousand, at a rate of demobilisation of about ten thousand men a month through the closing months of 1815 and the first months of 1816. The yards' contracts were to be closed as they matured; the standing warrants at the overseas stations were to be terminated on written notice through the resident agents; the paper obligations of the Board, outstanding on the day of the peace, were to be retired on their ordinary schedule at ninety days from date of drawing.

The Board's outstanding paper, on Knight and Wilcox's reconstruction from ADM 112 and the Navy Board's accounts, stood at approximately four and a quarter million pounds of face value in victualling bills on 25 June 1815. The paper was retired at maturity through the closing quarter of 1815 and the first quarter of 1816, at the ordinary rate of discount at which the Board's paper had moved during the war, without a general suspension or a demand of extraordinary supply from the Treasury. The Board's finance, at the peace, closed its wartime business at the ordinary rate at which it had transacted through the war; the figure rests on Knight and Wilcox's summary and on the Bank of England's own aggregate returns to the Treasury for the quarters concerned, not on an instrument-level review of the Bank's discount books, which remains undone<sup>78</sup>.<sup>79</sup>

### **The yards after the peace**

The yards' establishments were reduced through the second half of 1815 and 1816. The Deptford yard's cooperage staff was reduced from about eleven hundred at the peak to about four hundred by the middle of 1816; the brewhouse ran at a reduced schedule of one mash a day rather than two; the bakery reduced its production to peacetime standards; the salting-

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<sup>77</sup>Victualling Board, "Victualling Board Minutes, 1793-1815"; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>78</sup>Bank of England, "Discount Books for Navy and Victualling Bills, 1795-1815"; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>79</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

house did not undertake the autumn kill of 1815 at wartime scale and instead undertook a reduced kill sufficient for the peacetime issue and a reserve at the yard. Portsmouth and Plymouth reduced their establishments at similar rates. The overseas stations were, in most cases, wound up; Malta and Gibraltar were retained on a peacetime footing; Cape Town and Madras were reduced to a maintenance establishment; the Sicilian and Sardinian warrants were closed on written notice.<sup>80</sup> The Board's clerical establishment at Somerset Place was reduced from the wartime peak of forty-eight to a peacetime staff of about twenty-eight by the end of 1816.

The reduction did not, on the Board's own paper, carry the character of a discharge into a broken market. The wartime employment at the yards had drawn on a labour market that had absorbed the wartime demand and, at the peace, released a workforce with practical skills in cooperage, brewing, baking, salting, and the ordinary manufacturing trades; the London and Portsmouth private trades absorbed a proportion of it, and the wider trades of the Solent, Deptford Reach, and the West Country absorbed a further share. The Board's own retention of about a third of the wartime establishment at each yard held the residuum most familiar with its own procedures. The peacetime yard establishments through the 1820s and into the early 1830s were, on Knight and Wilcox's summaries, sufficient for a peacetime fleet at about a twenty-fifth of the wartime scale and were maintained at that level as an ordinary matter of the Board's finance.<sup>81</sup>

### **Rodger and Knight on the attribution of failure**

Rodger and Knight and Wilcox agree, on the aggregate, that the wartime provisioning was a substantial administrative achievement; they differ on the attribution of specific failures the wartime papers preserve, and the difference is worth stating rather than smoothing over. Rodger attributes the scurvy and general provisioning shortfalls of the West Indies expeditions of 1793 to 1796, under Grey, Jervis, and Abercromby, in part to a failure of Board practice in holding the aggressive tropical-station timetable the Pitt ministry's political direction had set, and attributes a class of Baltic shortfalls under Saumarez in 1808 and 1809 in part to a failure of Board practice in coordinating the yard's shipments with convoy sailing schedules. Knight and Wilcox read the same two episodes differently: the West Indies shortfalls, on their account, were failures of transport capacity rather than of the Board's own procedures, which had committed the deliveries on schedule; the Baltic shortfalls followed from Admiralty-directed sailing schedules and convoy weather the Board could not have anticipated, not from any fault in the Board's paper or its yard deliveries.<sup>82</sup>

The two readings are not, on the whole, incompatible; each locates a proportion of the specific failures in a different class of cause, and each is best supported in a different case. Rodger's attribution is closer to the material on the West Indies expeditions: the standing warrants at Jamaica and Barbados in the years to 1795 were not, on the fragmentary papers Knight and

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<sup>80</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>81</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>82</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

Wilcox themselves cite, of the density a well-provisioned station required, and the Board's yard shipments in those years included biscuit whose keeping quality at a tropical station was inferior to its keeping quality on the Channel and Mediterranean stations, a shortfall with a Board-side cause. Knight and Wilcox's attribution is closer to the material on the Baltic operations of 1808 and 1809: the Swedish stations at Karlskrona and on the Gulf of Bothnia were provisioned on a schedule the Admiralty's directions had set, the convoy weather did not accommodate, and the Board's yard shipments, on the aggregate figures, met the level and timetable the Board had itself committed to. The failures the wartime papers preserve are not, in other words, a uniform class explained by one cause; each attribution stands where its own evidence is strongest, and neither historian's account earns credit across the board.

### **The Board abolished, 1832**

The reforms of 1817 to 1832 that ended the Board of Victualling as a separate administrative office belong to the wider civil-service reform that closed a number of the ancien-régime administrative offices of the Crown and the Navy. The immediate parliamentary sequence was the report of the Commission of Naval Enquiry of 1805 to 1809; the parliamentary papers of 1817 to 1821 on victualling and provisioning; the Order in Council of 1821 that reorganised the Board's relations with the Navy Board; and the Order in Council of 1832 that abolished the Board as a separate office and transferred its functions to the Admiralty under a Comptroller of the Navy and, later, a Superintending Officer at each yard.<sup>83</sup>

The wider consequence at the yards was, in the transitional years, less than the parliamentary papers might imply. The yards continued to bake, brew, salt, and cooper the fleet's provisioning through the 1820s and 1830s at a peacetime scale; the manufacturing operations at Deptford, Portsmouth, and Plymouth were not, in the reform of 1832, closed or transferred to private contract in the aggregate. The 1832 reform closed the Board as an office; it did not close the yards as a manufacturing operation of the state, which continued into the middle of the century at the level the peacetime fleet required.

### **The reform in its political setting**

The abolition of 1832 belongs, in its political setting, to the wider reform of the Crown's administrative offices in the two decades after the peace. The Commission of Naval Enquiry of 1805 to 1809 had reported, in fourteen volumes, on the naval boards' wartime operations, and its recommendations carried into the parliamentary papers of 1817, 1821, and 1828 and, by the reform legislation of 1830 to 1832 under the Whig administration, into the Order in Council of 1832. The Board of Victualling was not a distinguished target of the reformers; it was one of several offices whose consolidation the wider reform contemplated, alongside the Comptroller of the Navy's office, the Navy Board, the Sick and Hurt Board, and the Transport Board, all of which were consolidated with the Admiralty on similar lines.<sup>84</sup> The reform's aim

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<sup>83</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Victualling Board, "Victualling Board Minutes, 1793-1815."

<sup>84</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

was administrative consolidation and a reduction in the number of separate boards under the Crown; the operational continuity of the yards, the contract network, and the paper apparatus at its peacetime scale was not, in that aim, disturbed. The office was closed; the functions continued in a different administrative form.

The reform's personnel consequences were moderate. The Commissioners, the Comptroller, the Chairman, the Secretary, and the clerkly establishment at Somerset Place mostly received pensions on the ordinary scale for civil officers of the Crown, or moved to the Admiralty's smaller consolidated staff; the manufacturing staff at the yards continued under the Superintending Officer at each yard. The Board's abolition in 1832 did not register, in the sense of the wartime performance, as a judgement on the Board's wartime work; that work had been ordinary industrial and administrative work at scale, and the reform closed the office that had directed it rather than the operating apparatus in the yards.

### **The paper apparatus in a smaller form**

The victualling bill did not survive the Board's abolition in its wartime form. The demobilisation of 1815 and 1816 retired the wartime paper on the ordinary schedule; the peacetime issue thereafter ran at a fraction of the wartime scale, and after 1832 the Admiralty drew it in a different administrative form. The wider bill market of the London discount houses, however, continued the practice the wartime paper had developed: the two-name and three-name paper of the merchant houses in the American, Baltic, Mediterranean, and Indian trades in the years after 1815 took the ordinary form of the wartime navy and victualling bills, and the discount houses of the 1820s and 1830s traded a bill of comparable form on a comparable schedule at a comparable discount. The wartime paper had established a working form for the traded short-term paper of the London market; the form survived the Board that had drawn it.<sup>85</sup>

## **Coda. The contract as the weapon**

### **The scale the disparity took**

The apparatus described above (the yards, the bills-register, the discount market at London, the resident agents at Malta, Gibraltar, and Cape Town, the standing warrants at Cork, Palermo, and Boston, and the Bank of England's discount book with the state's paper entered in it at a moderate rate) reduces, at the point where it touched the fleet, to a contractor's clerk, an inspector, and a receiving purser at a loading dock, and a piece of state paper the contractor took away for the ordinary business of the discount market.<sup>86</sup> A French contractor at Brest took, for a comparable delivery, a state paper that moved at a discount several times the British rate, on the aggregate returns Rodger and Morriss have drawn from the French naval archives; his working capital and his willingness to contract further were reduced accord-

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<sup>85</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>86</sup>Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*; Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*; Macdonald, *Feeding Nelson's Navy: The True Story of Food at Sea in the Georgian Era*; Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

ingly, and French provisioning fell short by the corresponding margin.<sup>87</sup> That comparison is documented for France. It is not extended here to Spain or the Dutch Republic, and the claim rests on the narrower, supportable ground stated in the preface: the arrangement materially increased British range and time on station, and the difference between the fleet Cornwallis held on the Ushant station through winter and summer and the fleet Villaret-Joyeuse and Villeneuve could put to sea only briefly is the clearest documented instance of it.<sup>88</sup>

Brewer's *Sinews of Power* establishes the wider fiscal setting. Here its naval mechanism was concrete: bills drawn by the two boards gave contractors working capital at a moderate discount and kept provisions moving to the fleet.<sup>89</sup>

### **The claim in its full form**

Napoleon's remark on the Grande Armée and the shopkeepers' navy is remembered in a form the historians have made ordinary, and it was closer to the truth than its speaker knew. The navy that beat him at Trafalgar and blockaded him at Brest and Toulon was a navy of contracts, bills, manufactories, discount houses, resident agents, and paper the state drew and the market discounted. The British system sustained this network at a scale the direct French comparison did not match. The Emperor's assessment was correct about the enterprise's commercial character and wrong about its military result.

The conquest of scurvy in 1795 belongs in the same register, on its own terms rather than as a second instance of the same claim. The physicians made the medical case; the Board made the article deliverable at scale, through a contract at Palermo, a delivery and inspection at Portsmouth, an entry in the ship's steward's book, and a bill discounted at a City house for the contractor's working capital in the following month's contract. Both kinds of work were necessary, and neither substitutes for the other. Scurvy ceased to be a first-order constraint on operational range: Cornwallis held Ushant through winter and summer, Nelson held the Mediterranean for two years without a return to home port, and Collingwood held Cadiz and Toulon until his death at sea. The fleet's endurance at the extended ranges of the wartime years rested, at its material base, on that machinery: the yards, the contracts, and the paper, and not on either the physicians or the administrators alone.

### **After the Board**

The Board of Victualling as an office was closed in 1832. The paper it had drawn survived, in a smaller form, in the ordinary practice of the London discount market; the yards continued at a peacetime scale into the middle of the century; the wartime men were dispersed into the private trades or retired on the ordinary pensions of the Crown. The material of the operation was ordinary throughout: the beer of a Deptford brewhouse, the biscuit of a Portsmouth bakery, the salt beef of an Irish contractor cured at a yard salting-house on the Thames or the

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<sup>87</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*.

<sup>88</sup>Rodger, *The Command of the Ocean: A Naval History of Britain, 1649-1815*; Morriss, *The Foundations of British Maritime Ascendancy: Resources, Logistics and the State, 1755-1815*; Knight and Wilcox, *Sustaining the Fleet, 1793-1815: War, the British Navy and the Contractor State*.

<sup>89</sup>Brewer, *The Sinews of Power: War, Money and the English State, 1688-1783*.

Tamar, the lemon juice pressed in Sicily and inspected on a Portsmouth wharf, the bill drawn at a yard clerk's desk and discounted at a City house not much above the Bank's own rate.

The wartime achievement lay in repetition: contracted provisions inspected at the yards, entered in ships' books, paid through discountable bills, and replenished before the next issue fell due. That routine did not decide a battle. It kept ships supplied long enough for Cornwallis, Nelson, and Collingwood to choose where and how to fight.

### **A note on sources**

The Board's papers survive at the National Archives in ADM 109 through ADM 112: out-letters, Commissioners' minutes, ledgers, and contract accounts.<sup>90</sup> The Caird Library holds complementary in-letters and orders, and the Bank of England Archive holds discount books for navy and victualling bills. The quantitative argument above relies on the published reconstructions of those series by Knight and Wilcox, Rodger, Morriss, Macdonald, and Brewer.<sup>91</sup>

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<sup>90</sup>Victualling Board, "Victualling Board Out-Letters, 1793-1815"; Victualling Board, "Victualling Board Minutes, 1793-1815"; Victualling Board, "Victualling Board Ledgers and Contract Accounts, 1793-1815."

<sup>91</sup>Victualling Board, "Victualling Board in-Letters and Orders, 1708-1819," National Maritime Museum, Caird Library, Royal Museums Greenwich, 1708; Bank of England, "Discount Books for Navy and Victualling Bills, 1795-1815."

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