

Armadas in an Age of Scarce Resources: Struggling to Maintain the Fleet in Seventeenth-century Spain

David Goodman

The Open University, Milton Keynes, U. K.

The profound consequences - economic, political and social - of expanding warfare in early modern Europe have been more and more emphasized by historians over the last few decades. Research in this broad area has, until quite recently, predominantly focused on armies.¹ But warfare in the seventeenth century had become increasingly naval, and the decision of governments to invest in large and permanent warfleets imposed a huge additional burden on top of the already draining military expenditure. Spain, seen through the eyes of its enemies, evoked images of fabulous wealth, a cornucopia of precious metals fed from Castile's possessions in the Indies. In reality, it is now generally accepted, there was a sharp downward trend in these silver remittances from the New World during the first quarter of the seventeenth century, just when Spain's rulers were planning ambitious programmes of naval expansion. And American bullion was only one of several shrinking crown revenues. How did this affect the Spanish Monarchy's aspirations to become a leading naval power? New light on this comes from fresh source material in the Spanish archives.

It is now well established that seventeenth-century Spain was entangled in a web of rapidly-growing demands for the defence of

¹ In the case of early modern Spain, the most notable pioneering studies on naval history are J.Alcalá-Zamora y Queipo de Llano, *España, Flandes y el mar del Norte 1618-1639*, (Barcelona, 1975); I.A.A. Thompson, *War and Government in Habsburg Spain 1560-1620*, (London, 1976) and 'Aspects of Spanish Military and Naval Organization during the Ministry of Olivares,' in the same author's *War and Society in Habsburg Spain*, (Aldershot, 1992), essay IV.

an empire scattered across the globe, with dwindling resources at its disposal. Partly due to falling output in the mines of Mexico and Peru, the treasure fleets that once brought Philip II some two million ducats of silver annually in the 1590s, slumped by the end of Philip III's reign in 1621 to just half of this value. Similarly, that other mainstay of royal revenue, the *millones*, had declined. This was a universal Castilian tax on wine and olive oil (from 1602 extended to meat), first granted to Philip II by the *Cortes* to subsidize the building of a permanent Atlantic fleet, the *Armada del Mar Océano*, after the failure of his Enterprise of England in 1588. But although renewed, much of this revenue was diverted to fund the continuing siege warfare in the rebellious Netherlands.

Financial exhaustion on all sides contributed to the ending of the long war with England in 1604, and to the truce of 1609-21 with the Dutch. Philip III had declared his inability to pay creditors in 1607. But even in these rare years of European peace, there was no let-up in the pressures of war on Spain's finances; hostilities continued in both Indies. In 1609 the English settlement of Virginia brought calls from the king's councillors in Madrid for a naval expedition to eject the intruders; otherwise they would gain a perfect base to attack Spain's treasure fleets and merchant shipping passing through the Bahamas Channel, as well as a centre for propagating Protestant heresy throughout the New World. And soon after this, bewilderment mingled with alarm in reactions to reports of English landings on Bermuda. At a meeting in 1613 of the royal committee responsible for the defence of the Indies, ministers explained that no attempt had been made to secure the uninhabited island because it was always assumed that its rugged coast, powerful offshore currents and fierce prevailing winds would be enough to deter invaders. Most of the committee advised a full-scale naval expedition, but in the end the much less expensive dispatch of a small reconnaissance mission was preferred by the king: just two caravels to find out what the English were up to. Over-optimistically, and in the face of intelligence reports that the English were sending ships, artillery and engineers to Bermuda, one

committee member speculated that the English may only have gone to fish pearls. With a treasury in continuing crisis, Philip III here went for the cheaper naval option.² But there were no hesitations over cost in the king's response to Dutch incursions in the Far East, threatening Spain's Moluccas and Philippines and their lucrative China trade. In 1607 - 19 no less than 7 million ducats of the Monarchy's revenues were spent on armadas and garrisons to defend these possessions on the other side of the world.³

On top of naval alerts in both Indies came renewed incursions by the Barbary corsairs on the coasts of the peninsula, attacks now no longer confined to Mediterranean shores but venturing further and further north, until they would round Cape Finisterre, capture Basque fishing boats and attack merchantmen carrying Vizcayan iron off Santander. To contain the corsair menace, the Council of War, in the 1610s, demanded renovation of the *Armada der Mar Océano*, the now run-down Atlantic warfleet. Its annual allocation of 500,000 ducats, some 5% of the treasury's total expenditure, had been cut to just 300,000 in 1612 on the advice of the Council of Finance which preferred these savings to economies in the royal household or maintenance of the Army of Flanders.⁴ The Council of War protested that this decision was jeopardizing the security of Spain: the president of Finance (as the chief official of that Council was called) was only supplying funds to sustain 13 ships and 2000 men, half of what was required for effective naval defence of peninsular coasts, and another 50,000 ducats was urgently needed for building six new warships to replace ageing vessels now unseaworthy. But this demand for shipbuilding funds, repeated and ordered by the king, was refused four times by the president of Finance who insisted there was no more money in a treasury

² Archivo General de Indias, Seville: *sección Gobierno, subsección Audiencia de Santo Domingo*, legajo 272, ff. 8-18, *consulta, Junta de Guerra de Indias*, 1 September 1613.

³ J. Israel, *The Dutch Republic and the Hispanic World 1606-1661*, (Oxford, 1982), pp.68-9.

⁴ AGS: *Consejo y Juntas de Hacienda*, legajo 502, *consulta, Consejo de Hacienda*, 15 October 1611.

saddled with heavy debts.⁵ The alarming state of the king's resources had been starkly apparent in the budget for 1615: total available income 3.88 million ducats, planned expenditure 10.6 million.⁶ In the end, to secure the indispensable funds for shipbuilding, Philip III was forced to make economies in the peninsula's land defences. In October 1616 the king ordered a review of expenditure on peninsular fortresses and garrisons, eventually endorsing recommendations to abandon two of Galicia's fortresses and dissolve three garrisons stationed in La Coruña, a total annual saving of 60,000 ducats to be transferred to shipbuilding for the Atlantic fleet.⁷

Heated exchanges between the Councils of War and Finance persisted throughout the seventeenth century. Rivalry over status came to the surface when Philip III ordered members of the two councils to assemble in the rooms of the president of Finance to discuss naval funding. The Council of War objected that this was an affront to its superior status and the meeting must instead be held in one of its rooms.⁸ Rivalry was heightened by competition for scarce resources. In the eyes of the Council of War, the Council of Finance was inefficient and sluggish in the release of urgently-needed funds. But the characteristic response from Finance was that the Council of War, through its sole concern with military and naval expenditure, failed to appreciate the true condition of the treasury: its unrealistic demands generated friction, its heavy expenditure on war distorted the budget and severely weakened the powers of the president of Finance.⁹

Naval estimates, prepared annually by the Council of War (from

⁵ AGS: GA 799, *consultas, Consejo de Guerra*, 2 September, 26 September, and 21 December 1615, with annotations of Philip III.

⁶ AGS: *Consejo y Juntas de Hacienda, legajo 528*, Fernando Carrillo, president of Finance, 'Relación del estado de la Real Hacienda y de los efectos y provisión del año de 1615,' 28 October 1614.

⁷ AGS: GA 3146, *consulta, junta de Provisiones*, 10 January 1617.

⁸ AGS: GA 729, *consulta, Consejo de Guerra*, 28 January 1610.

⁹ AGS: *Consejo y Juntas de Hacienda, legajo 542*, Fernando Carrillo, president of Finance, to Philip III, 4 August 1616.

1622, by its sub-committee, the *Junta de Armadas*) were explicitly inexact. The surviving documents convey recurring uncertainty on the magnitude of enemy naval threats to be faced in the coming year, the unpredictable expenditure on ship repairs which varied with the condition of individual vessels, and the fluctuating prices of victuals and naval stores. Imperfections in naval accounting added to the difficulties of preparing estimates. Two paymasters were attached to the *Armada del Mar Océano*, serving in alternation for two-year periods: while one received and distributed funds, the other was supposed to be busy with the preparation of accounts. But this systematic organization of expenditure collapsed with the regular failure of paymasters to present accounts.¹⁰

The main issue dividing the Councils of War and Finance was the question of priorities in an age of shrinking resources. Priorities were emphatically changed by the new regime which came to power in the last years of Philip III's reign. In 1618 the indulgent and negligent chief minister, the duke of Lerma, fell from power and was replaced by Baltasar de Zúñiga, diplomat and veteran soldier in the Gran Armada of 1588, and his nephew, the count of Olivares. The new men blamed Lerma for the decay of naval forces and the truce with the Dutch that they regarded as humiliating surrender. Now they began to plan sweeping reforms, medicine to restore a sick Spain ailing in education, morality, commerce, naval strength, and foreign policy. With the expiry of the Twelve Years Truce fast approaching, Zúñiga decided on economic warfare by naval means to force the Dutch to much more favourable peace terms. When, in October 1622, in the second year of Philip IV's reign, Zúñiga died, the pronounced naval emphasis would be sustained over the next two decades by Olivares, Spain's dictatorial prime minister. This was the man who, impressed by Dutch example, strove to promote Spain's naval power by the foundation of maritime trading companies and whose will would leave 100,000 ducats for a squadron of galleons to protect Spain's coasts. Such was his determination to make his master, Philip

¹⁰ AGS: GA 3167, *consulta, Junta de Armadas*, 16 June 1636.

IV, the mightiest monarch on earth by naval and military means that even members of the *Junta de Armadas* were at times moved to contain his zeal for naval expenditure, moderating his proposals that appeared wholly unrealistic in the context of available resources.¹¹

Under Zúñiga's reforming government, the allocation for the Atlantic fleet soon began to rise. In 1619 480,000 ducats were supplied - still not nearly enough for the Council of War who, the following year, were demanding 800,000. They had to make do with an armada of 22 ships that year, instead of the 36 they had wanted for defence against the Barbary corsairs.¹² The new president of Finance, Bernardino de Velasco y Aragón, count of Salazar, though more sympathetic than his predecessor to the establishment of adequate funding for the fleet, still warned that he could not balance the books with the revised allocation:

Your Majesty has sold his entire patrimony... The entire kingdom is impoverished: widows, orphans and monasteries are clamouring because they have nothing with which to pay their numerous debts...What we receive from the Indies gets less every year...And in the present state of the treasury not even the existing allocation of 480,000 ducats can be supplied to the Armada del Mar Océano.¹³

Nevertheless the allocation rose. In 1621, amidst protests from the Council of Finance of irresponsible overspending, 617,000 ducats were provided for this Armada. Where could the extra money be found? The count of Salazar's solution, cherished by Olivares, was to extend taxation to other parts of the Monarchy. For too long Castile had borne the burden of military expenditure; it was high time that Aragon, Catalonia, Valencia, Navarre, and the Italian possessions paid their fair share of the huge cost of defence.¹⁴ But the long-

¹¹ AGS: GA 1308, minutes of *Junta de Armadas*, 17 and 18 April 1625.

¹² AGS: GA 3147, *consulta*, *Consejo de Guerra*, 6 July 1620, with Philip III's response.

¹³ AGS: GA 1305, *consulta*, *Junta del Refuerzo y Provisión de la Armada y Galeras*, 23 October 1620.

¹⁴ *Ibid.*

established laws and exemptions of those regions proved too strong to break, and when armada funding shot up to over a million ducats in 1622, to 1.5 million in 1627 and reached a peak of 1.67 million in 1637, the increases fell on Castilians alone.

This soaring naval funding reflected the beginning of a new phase of unremitting warfare. Throughout Philip IV's long reign (1621-65) there would not be a single year of peace for the Spanish Monarchy in Europe. Just months after his accession, the truce with the Dutch expired and the hostilities that immediately recommenced would continue until 1648. On top of this financially draining and constant campaigning, other wars erupted. When, in 1628, the duke of Mantua died, the succession passed to a French claimant, the duke of Nevers. The prospect of a French ruler in territory adjoining Spain's strategic duchy of Milan induced Olivares to intervene. He expected rapid victory. But the war, lasting till 1631, was enormously expensive and the implementation of Olivares' plans for domestic reform, like the subsidizing of maritime trading companies, had to be shelved. Smouldering relations with France finally exploded into prolonged full-scale warfare, military and naval (1635-59). And within the peninsula itself the Monarchy was confronted with sustained rebellions in Catalonia (1640-59) and Portugal (1640-68).

The accumulating effect of these decades of expanding warfare was still greater strain on the Monarchy's finances. How could the enormous sums be amassed to fund armadas large enough to face the growing warfleets of the Dutch and French? Two fiscal devices were soon introduced that would continue to dominate Spain's naval and military funding throughout the seventeenth century. First, Philip IV authorized the manufacture of money, currency manipulation on an unprecedented scale. Monarchs in Spain and elsewhere in Europe had for centuries tampered with coinage, minting or reminting specie with the same face-value but reduced precious metal. In Spain the debased currency was *vellón*, with copper replacing the silver content in increasing proportions. Its use was already widespread in Philip III's reign but nothing like the

drastic debasement soon to occur. In 1621, immediately after war with the Dutch was resumed, Philip IV sanctioned a massive issue of copper coin in anticipation of rising military expenditure. Over the next five years nearly 20 million ducats of debased coin were minted, bringing a profit to the treasury of some 13 million ducats. But bad money drove out good, and by 1623 copper had become the currency of Castile. The silver premium - the extra quantity of *vellón* required to bring parity with silver coins of the same face-value - began to rise sharply, reaching 60% by 1628. That August, a drastic deflationary measure was enacted halving the nominal value of *vellón* and bringing the silver premium down to 10%. But the effects were short-lived because of the rising costs of war. In 1636, soon after the declaration of war with France, *vellón* coins of up to three times their former face-value were issued. And further debasements occurred after the outbreak of rebellions in Catalonia and Portugal, the silver premium soaring to 200%. For the remainder of the reign, Castilians would experience wild fluctuations in the official value of their currency, alternating inflation and deflation.

This instability of currency brought havoc to naval preparations. The deflation of 1628 generated protests from exasperated officials. The royal superintendent responsible for the building of a new flagship for the Atlantic fleet complained that the *vellón* in his charge was now worth so little that it would not be enough to pay for even a month's work on the ship.¹⁵ And the chest of the minister of artillery was declared similarly drained by devaluation, sapping the already inadequate resources for the provision of guns for warships.¹⁶

'Nobody wants *vellón*'. The frustrated comment came from García de Toledo, captain-general of the galleys of Spain.¹⁷ The refusal of *vellón* had already provoked coercive legislation in the previous reign after the inspector-general of the Atlantic fleet reported that conditions in the naval station of Cadiz were making it impossible to

¹⁵ AGS: GA 989, Alonso de Idiáquez to Pedro Coloma, 19 August 1628, Pasajes.

¹⁶ AGS: GA 972, *consulta*, Consejo de Guerra, 15 October 1628.

¹⁷ AGS: GA 989, García de Toledo to Philip IV, 15 May 1628, Puerto de Santa María.

equip the armada. Judging from his letter, it seems that the entire city of Cadiz had become a silver monetary enclave. The influence of foreign merchants, insisting on payments in silver for imported naval stores, had spread throughout the city until all transactions excluded *vellón*. The response of the government, through the Council of Finance, was to require the inhabitants of Cadiz, like the rest of Castile, to accept *vellón*. An exception was made for the foreign importers, who would have to be paid in silver.¹⁸ The transfer of massive weights of debased coin to naval zones like Cadiz entailed considerable freight costs for the treasury. To compensate for this, the silver premium in Cadiz was always 3% less than the rate in Seville, from where the *vellón* had been shipped.¹⁹

Vellón was legal tender only in Castile. In other regions of the peninsula silver prevailed and it was not only foreign merchants who had to be accommodated. Navarrese supplied victuals for the Atlantic fleet, beech timber for galley oars, and gunpowder from the royal mill at Pamplona but only for payments in silver, rejecting *vellón* even at a premium of 50%. No wonder the *Junta de Armadas* advised avoidance of Navarre for wheat provisioning of the armada, and looked instead to Asturias where *vellón* was current.²⁰ Portugal, another silver monetary zone in the peninsula, was far less dispensable than Navarre for equipping fleets. The immense value of Lisbon's secure port and strategic situation for the defence of the Atlantic seaboard generally ensured that scarce silver was sent there for naval preparations. But when financial crisis tightened, as in the late 1630s, even Lisbon proved too expensive. Olivares brushed aside the *Junta de Armada's* preference for Lisbon and ordered the fleet for 1640 to be equipped where *vellón* could be spent, in Galicia, despite the Junta's apprehension that the harbour of La Coruña was inadequately

¹⁸ AGS: GA 726, Martín de Aróztegui to Philip III, 9 September 1609, Cadiz, with annotated response of the *Consejo de Hacienda*.

¹⁹ AGS: GA 3288, Juan de Góngora to Philip IV, 22 December 1648, Seville.

²⁰ AGS: GA 3154, *consulta, Junta de Armadas*, 24 April 1630; *ibid.*, *Jegajo* 1250, Francisco Ruiz de Villegas to Pedro Coloma, 29 October 1638, San Sebastian.

defended and vulnerable to French attack.²¹ *Vellón* was not current in Catalonia, Valencia, the Balearic isles or Italy, an acute difficulty for naval funding after 1635 when war with France required the increasing presence of armadas and galley squadrons in the Mediterranean. In the summer of 1636 Alfonso Cardoso, provisioning contractor of the galleys of Spain then stationed in Barcelona, told the secretary of war 'I will not be to blame for any shortages'. He had been given *vellón* to spend in Catalonia.²² Guipúzcoa's silver currency presented formidable difficulties throughout Philip IV's reign. This Basque province was an important centre of shipbuilding, where workers in the yards insisted on wages in silver 'because otherwise they say they cannot find bread, wine and other essentials for their sustenance.'²³ The manufacture of small-arms at Palencia was similarly threatened by shortages of silver.²⁴ And at the end of the reign, another urgent appeal for silver came from the province, from Usúrbil where a squadron of ships was being built.²⁵

These variable monetary conditions within the peninsula explain the usual form of presentation of the Monarchy's annual naval estimates: a column for silver currency and a column for *vellón*, for varying circumstances. The flow of precious metal depended on the crown's bankers (Genoese, Portuguese and some Spaniards) who accepted *vellón* in exchange for silver at high rates of interest, a system which contributed to Philip IV's repeated bankruptcies. The most valued security for these short-term loans was the diminishing silver shipments from the Indies. The arrival of a silver fleet sent tremors throughout the peninsula's financial dealings. When, in 1622, the *Junta de Armadas* learned that the bishop of Chile had died in Seville after returning from the Indies and awaiting the arrival of his wealth,

²¹ AGS: GA 3173, *consulta*, *Junta de Armadas*, 10 December 1639 and *Estado* 3844/202, *consulta*, *Consejo de Estado*, 18 December 1639.

²² AGS: GA 1311, Alfonso Cardoso to Pedro de Coloma, 5 August 1636, Madrid.

²³ AGS: GA 946, Martín de Aróztegui to Philip IV, 1 February 1626, San Sebastian.

²⁴ AGS: GA 942, Jerónimo de Aybar, *veedor* of the arms works, to Bartolomé de Anaya, 1 March 1626, Palencia.

amounting to tens of thousands of ducats in silver, the immediate reaction was to secure the 20% duty on the bullion to help pay the costs of the coming year's armada.²⁶

Along with the manufacture of money, naval funding in Philip IV's reign was achieved by increased taxation. In 1626 the Castilian *Cortes* voted to double the *millones* subsidy from two to four million ducats a year for six years. From a previous levy on a few basic foodstuffs, the *millones* was extended to a 1% sales tax on everything except bread, the introduction of taxation on medicines and books bringing a chorus of protests from apothecaries and booksellers.²⁷ Most of the money was to be allocated to fund armadas and shipbuilding, fortresses and garrisons, and the manufacture of munitions, with smaller sums assigned to finance embassies. But the considerable local resistance to the new tax slowed collection; in some areas it completely failed to materialize. Seville was particularly unresponsive. The city was expected to supply 80,000 ducats for the fleet, but this quota of the *millones* soon came to be regarded as unreliable 'because it cannot be collected sufficiently rapidly and because there are grounds for suspecting its realization.'²⁸

The *millones* was a hated tax, and with the intention of finding a more equitable and efficient levy, the crown in January 1631 announced its abolition and replacement by a salt duty. Salt had been part of the regalia of Castile's monarchs in the Middle Ages, but now there was to be a regularly imposed high duty. In Andalusia and Granada there were salt-works and the tax was levied on production. Galicia and Asturias produced no salt, but bulky quantities were shipped in from Portuguese salt-pans at Aveiro, to be used by local fish-traders for salting. Potentially the salt revenues were considerable. In 1632, out of the Atlantic fleet's

²⁵ AGS: GA 3439, Miguel de Oquendo to Philip IV, 11 October 1660, San Sebastian.

²⁶ AGS: GA 1306, *consulta, Junta de Armadas*, 12 November 1622.

²⁷ *Actas de las Cortes de Castilla* (Madrid, 1877 -), vol. 44, pp.9-12, 20f and 170-4.

²⁸ AGS: GA 3153, statement by Juan de Castro y Castilla, inspector-general of the Atlantic fleet, with *consulta, Junta de Armadas*, 21 December 1629.

allocation of 750,000 ducats, no less than 390,000 were to come from the new salt-tax.²⁹ But in that year, just a few months after its introduction, riots in Bilbao forced the government to re-instate the *millones*, including within it a reduced salt tax. Vizcaya had been exempt from the *millones*, and the introduction of the salt-tax there was therefore no substitution of an existing tax but interpreted as Madrid's attempt to crush Basque liberties. Salt revenues from other parts of the peninsula would continue to be substantial, generating 570,000 ducats for the fleet in 1639 and again in 1640.³⁰ But in the end they proved disappointing. In 1642 severe shortages in the fleet resulted from the bankruptcy of the farmers of salt duties in Galicia and Asturias, and the failure of the lessee in Granada to pay up - writs were issued but to no effect.³¹

The search for a reliable and quickly collected tax was elusive. Despite the *Cortes'* regular renewal of the *millones*, galloping expenditure on war resulted in huge deficits. In April 1650 the president of Finance, José González, announced there was nothing at all available for that year's armada and less than 10,000 ducats for all other needs. He could see only two ways out of the crisis: make peace with France or tax bread. But it was objected that the second option raised terrifying prospects of revolt by a population nurtured on the prophecy of St. Vicente Ferrer foretelling the destruction of Spain if bread was taxed. As one councillor explained, 'bread is consecrated to the body of our Lord and must be free of tribute'.³² Amidst discussion of the sale of offices and royal land, the treasury continued to plummet. In 1651 the crown's revenues of 4.55 million ducats were dwarfed by expenditure of 12.5 million. Philip IV declared bankruptcy in 1652 and again in 1662.

In a reign of unremitting financial crisis it is not surprising to encounter official documents portraying a rush to grab unexpected windfalls and a scraping of all resources to amass the annual funding

²⁹ AGS: GA 3159, *consulta, junta de Armadas*, 23 April 1632.

³⁰ AGS: GA 3173, 'Relación del dinero que será menester para la armada del año que viene de 1640', with *consulta, junta de Armadas*, 28 October 1639.

³¹ AGS: GA 3205, *consulta, junta de Armadas*, 16 and 30 January 1642.

of large armadas. In 1625 two Dutch merchantmen, swept by storms, ran aground on the coast of Guipúzcoa. Philip ordered the recovered cargoes of cloth and other valuable merchandise (that of one of the ships was estimated to be worth over 30,000 ducats) to be sold at public auction and the proceeds applied to equipping warships.³³ On the declaration of war with France, the confiscation of French assets in Seville and Sanlúcar provided funds for the *Armada del Mar Océano* in 1635–6.³⁴ And twenty years later, when Spain was at war with republican England, the seizure of English property in peninsular ports yielded 18,400 ducats for the armada in 1659.³⁵

At every stage of naval preparations in seventeenth-century Spain one finds disruption from funding failures. With its rich endowment of timber resources, Spain was never short of oak for building hulls, yet there were repeated occasions when the felling of trees was subject to prolonged delays. In San Sebastian in 1636, a shipwright and over 150 men, assembled for the purpose, were hanging around for month after month waiting for the king's order to send 12,000 ducats to materialize. Until then, work could not begin in the forests; meanwhile the bill for supporting these men was accumulating.³⁶

Output in peninsular shipyards in Philip IV's long reign shows a steep decline, never approaching the 32,000 tons of the 1610s. In the 1620s the figure fell sharply to around 10,000 tons; then a small improvement in the 30s to 11,000 tons, decreasing in the 40s to a little over 7,000 tons, and a slump in the 50s to just 3000; the 60s show an upturn to over 9,000 tons.³⁷ Diminishing resources caused

³² AGS: *Consejo y Juntas de Hacienda*, legajo 968, *consulta*, *Junta de Medios*, 12 April 1650; for the invoked prophecy, *ibid.*, legajo 894, *consulta*, *Consejo de Hacienda*, 6 September 1646.

³³ AGS: GA 946, 'Copia de la comisión que se envió a Martín de Aróztegui para vender y beneficiar la hacienda de los dos navíos de olandeses,' 2 December 1625, Madrid.

³⁴ AGS: GA 1177, 'Relaciones del cargo y data del pagador general D. Mateo de Velasco Aguero,' 28 January and 10 April 1636, Cadiz.

³⁵ AGS: GA 3421, *consulta*, *Junta de Armadas*, 14 March 1659.

³⁶ AGS: GA 3167, *consulta*, *Junta de Armadas*, 18 February 1636.

³⁷ My approximate figures are based on numerous manuscript sources.

by soaring military expenditure is the plausible explanation of the trend. But some historians, in addition, allege that Spanish shipbuilding was becoming increasingly expensive through rising labour costs. Chaunu asserts that the wages of carpenters and caulkers in peninsular Spain rose faster than prices during the entire period 1580-1640, a wage inflation 'much more marked' than in contemporary England or Holland.³⁸ But this assumption of high wages is contradicted by the documentary record. Carpenters and caulkers working on the preparation of Indies fleets (predominantly careening and repairs) on the river of Seville, the geographical focus of Chaunu's great study, were earning a good wage of at least 8 *reales* a day (11 *reales* = 1 ducat). But for craftsmen building ships for the king on the north coast it was a different story. They were paid half of that, and there was no marked improvement throughout the first half of the seventeenth century. The rate set by the crown regulations of 1607 of 4 $\frac{1}{2}$ *reales* a day represented an increase of half a real, though this was offset by the new requirement for shipyard workers to purchase their tools. And in 1618 the rate was reduced to 4 $\frac{1}{4}$ *reales*. Thirty years later, reluctant workers employed on the construction of a new flagship for the Atlantic fleet at Pasajes (Guipúzcoa) rejected Philip IV's offer of 4 $\frac{3}{4}$ *reales* a day, which 'wouldn't be enough to live on because of the high price of food'. Worse, the king was offering pay in *vellón* in a zone of silver currency. The carpenters' decision to walk out and look for better pay elsewhere was only halted at the last minute by the support of royal administrators on the site, confirming that the offered wage fell below the cost of living. Accordingly, an improved offer of half of the pay in silver came from Madrid. It was grudgingly accepted and the craftsmen continued to press for more.³⁹ The official estimate for the flagship they were building shows that labour costs were kept down to a modest third place in the planned total cost of 51,185 ducats: 32%

³⁸ P. and H. Chaunu, *Séville et l'Atlantique*, vol. 1 (Paris, 1955), p. 205.

³⁹ AGS: GA 3297, Juan de Landaeta to Philip IV, 30 September and 12 November 1649, San Sebastian.

of this was to go on timber purchases, 24% for cables and rigging, and 18% for labour, assuming 16,000 days, pay for carpenters and 3,000 days for caulkers.⁴⁰ Low pay explains the shortages of craftsmen for royal shipbuilding projects. In the middle of Philip IV's reign there were insufficient craftsmen on the north coast to sustain simultaneous construction at Colindres (Cuatro Villas) and Zorroza (Vizcaya); in an attempt to relieve the scarcity, the *Junta de Armadas* wanted carpenters and caulkers to be exempt from military service, reserved occupations.⁴¹

To relieve the treasury of the heavy costs of building warships, alternatives to direct construction by the crown were regularly reviewed. Subsidies to private builders, already tried in Philip II's reign, were again considered by the *Junta de Armadas* in the 1630s. Privately-built ships might be embargoed by the king for naval service in return for pay to the owner and the promise of compensation for destruction in war. But when Philip IV asked how much would be needed to activate private shipbuilding on the Cantabrian coast, the Junta's response of 50,000 ducats a year for four years brought a curt reaction from the king: 'If money grew in the streets and fields it would not be enough for what you request.'⁴²

Another way, crown contracts, already the preferred method of shipbuilding in the late 1610s⁴³, would become standard under Philip IV and Olivares. In the early 1630s the *Junta de Armadas* estimated that a galleon built by royal administration would cost 35 ducats a ton, and 31 ducats by contracting out, a substantial saving of 2,000 ducats on an average-sized galleon. Tenders and negotiations commonly referred to the agreed terms of previous contracts. The king's ministers sought to keep charges down to

⁴⁰ AGS: GA 3274, *consulta*, *Junta de Armadas*, 6 June 1647.

⁴¹ AGS: GA 1206, Vicente Martolosi to Philip IV, 6 April 1637, Colindres, with annotated response of the *Junta de Armadas*, 27 April 1637; and Alonso de Uria y Tovar to Pedro Coloma, 16 June 1637, Bilbao.

⁴² AGS: GA 3159, *consulta*, *Junta de Armadas*, 1 March 1632, with Philip IV's annotation.

⁴³ I.A.A. Thompson, *War and Government in Habsburg Spain 1560-1620* (London, 1976), pp. 188-205.

earlier levels, bidders asked for concessions granted to previous contractors. In the agreed contract, the king promised to pay money in instalments for the construction, a loan later to be discounted from the cost of the king's hire of the completed vessel. Contractors undertook to observe royal regulations relating to specifications of timber, masts, cordage and design; the king's inspectors monitored construction. A deadline was set for completion and delivery, with penalty clauses for failure to meet it. Once the vessel was ready to sail, it began to earn the king's pay at a standard rate of 9 *reales* per month per ton. The king supplied artillery and munitions, provided victuals, and paid the crew's wages. Fringe benefits, a strong incentive for contractors, might take the form of an ecclesiastical benefice for a nephew or even ennoblement of the contractor.

In practice the king failed to pay the due instalments and work was either brought to a halt or the contractor drew on his own resources. The crown therefore looked for wealthy contractors. That was why two Genoese brothers, Sebastián and Nicolás Judice (*sic*), were selected in the 1620s to build eight galleons in Catalonia for the king's Armada of the Straits. Unlike the impoverished nobility of Catalonia, they were men with capital, currently engaged in farming crown revenues in Barcelona.⁴⁴ Martín de Arana, one of the king's most valued contractors in the 1620s and 30s, owned forests and forges that could supply nails and anchors. In the end he would have to bear much of the costs of the galleons he built for Philip IV.⁴⁵ He could afford to. In return he secured ennoblement for himself and two sons, all gaining admission to Castile's prestigious Military Orders of chivalry. Less wealthy contractors could not sustain such financial burdens. Juan de Amasa of Rentería, already owed thousands of ducats for two galleons completed and in royal service, was unable to proceed

⁴⁴ AGS: GA 1306, *consulta, Junta de Armadas*, 4 June 1622.

⁴⁵ C.R. Phillips, *Six Galleons for the King of Spain* (Baltimore and London, 1986), pp. 84-89.

with the construction of a third when he was again starved of the king's funds.⁴⁶ The marquis of Valdecarzana, who contracted to build six galleons for the Atlantic fleet, lost all interest in the project and returned to his estate after another failure of the king's unreliable revenues: only 2,500 ducats of a promised 40,000 ever arrived. Six years later the marquis, summoned to Madrid to discuss resumption of construction, died on his way there.⁴⁷ For some time the *Junta de Armadas* had been warning of the dwindling numbers of shipbuilding contractors, ruined by the crown and leaving heirs with no capital to continue building.⁴⁸

The only other option was for the crown to purchase foreign ships, though, with rising international tension, that would require diplomatic subterfuge. In the opening years of renewed warfare with the Dutch, a bargain came on the market and was eagerly snapped up. In 1623 the new ambassador in London, Don Carlos Coloma, sent an excited communication to Madrid, reporting that a newly-built ship on the Thames, the *Tiger* with 30 guns and gauged at 500 tons, was up for sale at the cheap price of 3,750 pounds sterling, equivalent to 15,000 Castilian ducats. The owner had fallen into debt and was now selling below cost price. Coloma's inquiries indicated that the vessel was of superior design: manoeuvrable, 'ideal for war', and a type that 'could serve as a model' for imitation in Spanish yards, so providing an opportunity for the Monarchy to build a formidable fleet to confront the Dutch, the Barbary corsairs, and the English in India. With a severe shortage of warships in Spain, the *Junta de Armadas* urged the king to send the necessary money to London. Coloma did all he could to keep the sale secret from the lurking Dutch: a Flemish merchant was employed to make the purchase, as if for himself, and the ship disguised by loading it with merchandise and manning with minimum crew. The sale was completed and the ship sailed for Lisbon in December 1623, just as

⁴⁶ AGS: GA 3165, *consulta*, *Junta de Armadas*, 7 February 1635.

⁴⁷ AGS: GA 3394, *consulta*, *Junta de Armadas*, 17 April 1657; GA 3457, *consulta*, *Junta de Armadas*, 20 April 1663.

⁴⁸ AGS: GA 3337, *consulta*, *Junta de Armadas*, 24 October 1653.

Anglo-Spanish relations started to deteriorate through the failure of the proposed Spanish marriage of Charles, Prince of Wales, to the Infanta, daughter of Philip IV. By March, England was at war with Spain and peace would not be restored until 1630. The ship had been bought just in time; within weeks purchase would have been impossible: stricter controls would have prevented any such export of English vessels to the peninsula. Coloma was proud of this service to his king, declaring 'it is one of the finest ships I have seen in all my life', but the next few lines of his letter ensured that news of the transaction would not have been greeted with full joy in Madrid. In the end the Flemish go-between had paid well over 6,000 pounds sterling for the *Tiger*, a much higher price, due to unexpected repairs, replacement of cordage, and provision of anchors and gunpowder. The ambassador meekly sent the king a bill for the balance.⁴⁹

With warfare intensifying after the outbreak of hostilities with France in 1635, the shortage of ships became acute, threatening Spain's hegemony in Europe and the Indies. Philip IV and Olivares could not wait for bargains to come up for sale or for the minimum two years it took to build a galleon in peninsular yards. Ships lost in storms or in action had to be replaced immediately. A state of emergency arose after the Monarchy's loss of around 100 ships between August 1638 and October 1639, in the destruction by the French at Guetaria and the Dutch at the battle of the Downs. The purchase of foreign ships was given top priority and somehow (it is not clear which other allocations were demoted) large quantities of silver became available for the purpose. Frantic efforts were made throughout Europe to secure warships. Urgent instructions were sent to viceroys, ambassadors and other agents, along with remittances of silver.⁵⁰ By the end of 1639 twelve ships had been bought from neutral England for the Atlantic fleet at a cost of 250,000 *escudos* (227,273 ducats).⁵¹ In the same year, the viceroy of

⁴⁹ AGS: GA 895, Carlos Coloma to Philip IV, 14 February and 22 April 1623, London; and GA 911, same to same, 1 February 1624, London.

⁵⁰ AGS: GA 3173, *consulta, Junta Particular*, 16 November 1639 conveys the urgency of Olivares' instructions.

Naples, the duke of Medina de las Torres, reported progress in the purchase of four large vessels: two Swedish-built and two Dutch, secretly negotiated with a financier in Venice so that it would appear the ships were being bought for the Republic.⁵² And the following year, Olivares sent Spain's ambassador in Genoa, the count of Siruela, 100,000 *escudos* 'to use with all secrecy' to repair the losses suffered by the Monarchy at the Downs, buying 'as many vessels as possible of the quality and size required for the armada'. Within months, two of the ambassador's purchases had arrived in Cadiz: the *Profeta Elias*, 500 tons and 24 guns, bought for 15,600 *escudos*, and the *Testa Dorada*, a galleon with 32 guns, bought from the duke of Tuscany for 16,000 *escudos*.⁵³ In the Baltic, the Monarchy's Walloon agent, Gabriel de Roy, employed there to purchase warships, sent back promising reports of good craftsmen and moderate prices in Gothenburg, Lübeck and Putzig, but the sample vessel built in Hamburg that he dispatched to Seville was rejected as prohibitively expensive: 8 ducats a ton more than the cost of building in the peninsula.⁵⁴ In the early 1640s Olivares had several meetings with the Danish ambassador on the sale of 'good quality warships', but they were fruitless: the king of Denmark was at war with Sweden and had no ships to spare.⁵⁵ At the same time, interest was aroused by the reappearance in London of the *Gran Alejandro*, a Spanish galleon captured by the Dutch at the Downs and subsequently bought by 'an English gentleman' intending to employ it for raids in the Spanish Caribbean. Now repaired and still carrying cannon embossed with Philip IV's arms, national honour and security of the Indies demanded its recovery. The ambassador

⁵¹ AGS: GA 3173, *consulta, Junta de Armadas*, 10 December 1639.

⁵² AGS: *Estado* 3261/152, duke of Medina de las Torres to Philip IV, 11 March 1639, Naples.

⁵³ AGS: GA 3176, 'Memoria de los efectos a que se van aplicando los 100,000 escudos que se ha embiado de España al conde de Siruela,' with *consulta, Junta de Armadas*, 16 May 1640; GA 3183, duke of Maqueda to Philip IV, 25 June 1640, Cadiz.

⁵⁴ AGS: GA 3176, *consulta, Junta de Armadas*, 8 June 1640.

⁵⁵ AGS: GA 3191, *consulta, Junta de Armadas*, 20 March 1641; and GA 3223, *consulta, Junta de Armadas*, 17 October 1644.

in London, the marquis of Velada, was negotiating the purchase, but for greater secrecy, Philip endorsed the advice of the *Junta de Armadas* to proceed through the king's brother, the Cardinal Infante, in Flanders.⁵⁶ There is no record of the outcome.

Once the peace of Münster (1648) brought the long war with the Dutch to an end, new opportunities arose for buying warships. Offers could now be sent openly to Madrid by Amsterdam merchants. But when the *Junta de Armadas* responded positively, advising the king to dispatch a purchase order to Amsterdam, detailing specifications of required tonnage and number of guns, Philip's longer-term reflections led him to dismiss the proposal: 'What is most desirable for my service is to conserve shipbuilding in Spain and not to diminish it... The money required for these purchases is better employed stimulating construction here; otherwise the builders will decline and there will be no ships available.'⁵⁷ Unfortunately, continuing financial crises, culminating in the king's bankruptcy in 1652 and again in 1662, prevented long-term investment in peninsular shipbuilding. And when, in 1663, numerous obstacles were finally overcome in the long-delayed completion of four galleons, built in Guipúzcoa by the contractor, Miguel de Oquendo, the *Junta de Armadas* was filled with frustration and deep gloom by the news that, just months after their launching, all were destroyed in a storm off Rota, near the bay of Cadiz. Blaming the captain-general of the Atlantic fleet, the duke of Alburquerque, for the elementary blunder of leaving port in threatening weather, the *Junta* grieved over 'an extremely great loss, because this was the principal foundation on which, it was hoped, a considerable armada would be built.'⁵⁸ Buying foreign ships would continue to be essential for a strong *Armada del Mar Océano*; in the naval estimates for 1665, 8 of the planned armada of 30 vessels were to be procured by purchases abroad.⁵⁹

⁵⁶ AGS: GA 3191, *consulta*, *Junta de Armadas*, 16 March 1641.

⁵⁷ AGS: GA 3278, Philip IV's annotation to *consulta*, *Junta de Armadas*, 29 June 1648.

⁵⁸ AGS: GA 3457, *consulta*, *Junta de Armadas*, 21 October 1663.

⁵⁹ AGS: GA 3465, *consulta*, *Junta de Armadas*, 12 August 1664.

Recurrent shortages of artillery and munitions, again attributable to a treasury in crisis, hampered naval preparations and prevented the immediate bringing into commission of newly-built galleons. Funds allocated to the artillery sector were regularly diverted, causing disruption in the production of bronze cannon at the foundries in Seville and Lisbon - this was completely out of action for a period of four years in the 1630s because of lack of copper. Although the peninsula was unusually rich in copper ore, a combination of cash shortages and undeveloped metallurgical skills left the mines dormant. So, instead of plentiful copper, the metal was a scarcity, imported from Cuba and Hungary when funds permitted, and its use for artillery production had to compete with Castile's heavy demands for debased copper currency. After the heavy losses of ships and guns at the catastrophic defeat of the Downs, Olivares immediately imposed a moratorium on the manufacture of *vellón* to restore artillery stocks.⁶⁰ Tin, the other raw material for founding bronze cannon, was regularly imported from England when the two countries were not at war. Hence the strong interest aroused in the *Junta de Armadas* in 1626, a year of Anglo-Spanish hostilities, by news of the discovery in Bollo (Galicia) of tin ore close to abundant copper ore. This propitious proximity of the materials of bronze presented the prospect of freeing Spain from dangerous dependence on unreliable foreign sources for these strategic materials; instead there might be efficient production of naval artillery at La Coruña.⁶¹ But the initial excitement soon evaporated and there is no trace of any further discussion in the documentary record, an indication of a project impracticable through unavailability of funds for investment and lack of metallurgical know-how.

Capital and metallurgical skills were meanwhile being introduced to the peninsula by contracted entrepreneurs from Liège. In the first year of Philip IV's reign, Jean Curtius undertook the production of cast-iron artillery (cheaper than bronze but with the

⁶⁰ AGS: GA 3173, *consulta, Junta Particular*, 16 November 1639.

⁶¹ AGS: GA 944, Juan Fajardo de Guevara, governor of Galicia, to Philip IV, 28 November 1626, La Coruña, with annotated response of the *Junta de Armadas*.

disadvantages of being heavier and rusting) and cannon-balls for the Monarchy's armadas, galleys and fortresses. The contract required Curtius to train Spanish technicians and so prepare for future independent production. Liérganes, close to Santander, became the site of the peninsula's first blast-furnaces, but difficulties with the peculiarities of the local ore brought Curtius to financial ruin. Not till 1633 was the process perfected under the direction of Curtius' successor, Georges de Bande, a Luxemburger.⁶² Although Olivares described the Liérganes plant as 'one of the most precious jewels the crown of Spain has ever had or could have,'⁶³ repeated failures to provide funds almost caused operations to collapse, only the director's borrowing at high rates of interest kept production going. But the desired rearing of Iberian founders never materialized: the Spanish had 'not applied themselves.'⁶⁴

By 1640 these furnaces had supplied the crown with 1,171 pieces of artillery and well over 200,000 cannon-balls. That solved the previous intermittent production of shot at Eugui (Navarre), where in 1627 the craftsmen (the offspring of immigrant Milanese armourers and local Navarrese women), owed 12,000 ducats of pay, began an industrial protest of a type reminiscent of a later century. Almost the entire workforce left on a march to Madrid to confront the king with a pay-demand. The Council of War advised stopping the strikers before they arrived in the capital or 'bad consequences' would follow; a magistrate was sent to order them to turn back or face six years at the oar of the king's galleys. 31 clamouring workers ignored the warning and reached Madrid. The Council of War gave in, advised payment of the outstanding wages, and Philip agreed.⁶⁵

Liérganes relieved the Monarchy's shortages of cannon and shot, but chronic shortages of gunpowder persisted throughout the

⁶² J. Alcalá-Zamora y Queipo de Llano, *Historia de una empresa siderúrgica española: los altos hornos de Liérganes y La Cavada, 1622-1834* (Santander, 1974).

⁶³ AGS: Estado, legajo 2520, consulta, Consejo de Estado, 21 October 1633.

⁶⁴ Alcalá-Zamora, *Historia de una empresa*, p. 55.

⁶⁵ AGS: GA 950, consulta, Consejo de Guerra, 22 August 1627.

seventeenth century, incapacitating warships and delaying sailings of armadas. Naval and land forces competed to secure a scarce commodity. In mid-century, war on all fronts brought soaring demand for powder; in 1651 the captain-general of artillery was asking for 10,000 *quintales* (hundredweights) a year. Peninsular production never approached that level. Sulphur, one of the ingredients of gunpowder, was required in thousands of *quintales* a year, but output at the royal mines of Hellín (Murcia), starved of funds, did not exceed an annual average of 760 *quintales* in 1656-63.⁶⁶ And production of the other principal component of gunpowder, saltpetre, at the main centre of Priorato de San Juan (New Castile), was frequently interrupted by funding failure. Without ready cash, Philip IV expressed interest in a proposal to import saltpetre from Morocco in exchange for cloth.⁶⁷ Even when saltpetre and sulphur were available, their mixture with charcoal and grinding to form gunpowder was prevented by under-funding of the king's powder-mills at Pamplona and Málaga - this, the larger, had the capacity to produce 2,000 *quintales* a year at a cost of 45,000 ducats, but in 1632, a typical year, the mill was supplied with no more than 6,000 ducats.⁶⁸ Periodically, the shortages assumed crisis proportions; emergency measures were then taken to find contractors willing to loan the king money to import bulk quantities for the Atlantic fleet, as in 1642 when 4,000 *quintales* of powder were to be brought from Genoa.

These difficulties in securing munitions for the fleet were dwarfed by the obstacles to naval victualling. The costs of provisioning were much greater, the commodities perishable in an age with inadequate techniques of preservation, and produce seasonal. The price of wheat, the basic foodstuff for the staple diet of naval biscuit, fluctuated strongly from month to month. In Seville, in the heart of Andalusia's granary, the price in 1648 varied

⁶⁶ AGS: *Contaduría Mayor de Cuentas, tercera época, legajo* 845, accounts of Juan de Castro y Frías, superintendent of the sulphur mines, Hellín.

⁶⁷ AGS: GA 1293, duke of Medina Sidonia to Philip IV, 11 July 1639, Sanlúcar.

⁶⁸ AGS: GA 1051, report of marquis of Leganés, 14 October 1632, Madrid.

from 33 to 111 *reales* per *fanega* (roughly 1 $\frac{1}{2}$ bushels). Shrewd purchasing, ready cash, and secrecy were called for whenever victualling was undertaken by the king's commissariat or (more commonly) contractors. When, in 1650, a crown agent was instructed to ascertain the current price of wheat in the Castilian wheat-lands of Tierra de Campos, plains to the north of Palencia, he was urged, above all, to maintain secrecy; otherwise, once it was learned that bulky provisioning for the fleet was afoot, the price would soar, bringing unsustainable pressure on the treasury.⁶⁹ The king's ministers had not yet heard that much of that region's crop was then being consumed by locusts.

Tensions were generated in the cities by naval victualling, above all in Seville. Rising anxieties were fuelled by fears that the demands of the fleet might so reduce wheat supplies as to bring urban famine. The spectre of starvation was all the more threatening in years of harvest failure caused by drought or floods. In the terrible famine of 1647, Galicians stoned agents trying to buy wheat for the contractor of the king's galleys.⁷⁰

Victualling failures, leading to delayed sailings, were also caused by deficiencies in the transport infrastructure. A commissary appointed to purchase victuals in Extremadura could not find the 1500 carts he needed to send the requisite quantities of wheat, pork, cheese and chick-peas from Badajoz to the Atlantic fleet in Lisbon.⁷¹ And a deadline for the delivery of wine from La Rioja to the fleet in Pasajes could not be fulfilled because of shortages of mules.⁷²

Shortages, human and financial, made manning the fleet an increasingly uphill struggle for the king's recruiting officers. All the evidence points to a sharp fall in the numbers of Spanish seamen in this period. Spain's general population had been

⁶⁹ AGS: GA 3301, *consulta, Junta de Armadas*, 31 July 1650.

⁷⁰ AGS: GA 3260, *consulta, Junta de Galeras*, 30 August 1647.

⁷¹ AGS: GA 990, Juan Ramírez to Philip IV, 6 May 1628, Badajoz.

⁷² AGS: GA 3320, Demetrio Serratura to Fernando de la Riva Herrera Acevedo, 4 August 1651, Pasajes.

declining since at least the 1590s, the result of emigration to the Indies as well as terrible epidemics, the pestilences of 1596-1602 and 1648-52, which ravaged the entire peninsula. On top of these scourges, seamen lost their lives in the king's service, through enemy action or disease; thousands of mariners from the north coast were killed in the battle of the Downs. A different explanation for the disappearing stock of seamen in Andalusia was given by the ninth duke of Medina Sidonia, the all-powerful landed aristocrat in the region, on whom the king most relied for recruitment there. He blamed local taxes on fish. Fishermen, finding their occupation increasingly unprofitable, were moving inland to till the fields, a development that threatened to destroy the nursery of seamanship. Whatever the force of this explanation, the duke was able to prove the downward trend in Andalusia. He produced records of a muster in Gibraltar, fifty years before, which revealed the enlistment of 900 seamen and, sending it to the king, commented that 'if such a number could be found today on the entire coast it would not be bad.'⁷³

With a steadily worsening state of the treasury, the crown's recruiting policy was dominated by the concern for maximum economy. Manning levels were cut to a bare minimum at the beginning of Philip IV's reign: reduced from 23 to just 16 seamen per 100 tons burthen, a figure that was seen as dangerously low by Martín de Aróztegui, secretary of the *Junta de Armadas*, but he was outvoted in the interests of economy.⁷⁴ Spain's monarchs in the seventeenth century were in no position to compete with the wages paid in the private sector to seamen aboard merchantmen or employed in Newfoundland whaling. The only tactical response was to begin recruiting in January, before seamen left for Newfoundland and when they had spent all their earnings of the previous year. But that required cash in hand and normally half in silver; typically, in Vizcaya in 1626, money arrived too late, the

⁷³ AGS: GA 1242, duke of Medina Sidonia to Philip IV, 30 September 1638, Sanlúcar, with record of a muster in Gibraltar, 8 August 1581.

⁷⁴ AGS: GA 3148, *consulta*, *Junta de Armadas*, 14 April 1623.

seamen had departed.⁷⁵ The king's pay fluctuated, but showed a strong downward trend at a time of rising prices. From 66 *reales* a month in 1623, the new regulations of the Atlantic fleet in 1633 cut the seaman's wage to 44 *reales*, and after subsequent brief rises it was back at the same low figure in 1655.

Pay and conditions in the king's service were made still less attractive by an unforgettable record of unpaid wages and broken promises of leave. Vizcayan seamen had vivid memories of a painful return to their homes after a much-delayed leave was finally granted. Left penniless and without passage home 'they came overland, selling their weapons and their clothes, begging for alms.'⁷⁶ A petitioning seaman from Bermeo conveyed his 'extreme need and misery'; after being blinded in naval action, he was still owed pay and unable to support his wife and seven children.⁷⁷ 'Select the unmarried', 'bachelors are less missed' - those were the repeated recommendations for recruiting for armadas.⁷⁸ Because of the poor prospects, women in the north-coast region of Cuatro Villas in mid-century were reported to be refusing to marry youths who enlisted.⁷⁹

The only incentives the king could offer failed to attract: tax concessions for fathers with four sons serving in armadas, to continue if two of them were killed and the other two remained in service. This unprepossessing benefit was tied to cooperation with the proposed *matrícula*, a register of seamen, designed to furnish central control over their movements and availability for armada service.⁸⁰ Without a rush of volunteers, impressment remained the norm in Andalusia, Portugal, and Galicia; but in the principal recruiting zone of the Basque provinces, Madrid's naked

⁷⁵ AGS: GA 994, Domingo Ochoa de Irazagorria to Philip IV, 26 April 1626, Bilbao.

⁷⁶ AGS: GA 806, Domingo de Lezama to Philip III, 20 April 1615, Bilbao.

⁷⁷ AGS: GA 846, petition of Domingo de Sudupe, 1619.

⁷⁸ Museo Naval, Madrid: *Colección Fernández de Navarrete, tomo 18, documento 77, folio 401v*, 'Parecer que dió D. Antonio de Oquendo,' 21 May 1619; AGS: GA 3205, *consulta, Junta de Armadas*, 9 January 1642.

⁷⁹ AGS: GA 3406, Antonio de Aranguren y Salcedo to Luis de Oyanguren, 7 October 1657, Castro Urdiales.

⁸⁰ AGS: GA 3149, *Exempciones que se conceden a la gente de mar que matricularse en las costas destes reinos*, 31 October 1625, Madrid.

impressment, ruled out by provincial liberties, had to be disguised by mediation of local officials. In the 1630s the inspector-general of the Atlantic fleet declared impressment in Andalusia to have been counter-productive, yielding cargo-handlers and others wholly inept for armada service; good pay entirely in silver - not *vellón* - was the remedy, for 'only by pouring money will Your Majesty have seamen.' The response of the *Junta de Armadas* was that silver was too scarce for this to be practicable.⁸¹ Consequently the Monarchy continued to rely on foreign recruits, especially Flemings and others from Catholic Ragusa (Dubrovnik). Like other navies of the period, Spain's fleets were multi-national. But the enlisted foreigners soon discovered that offers of pay were not always honoured. In 1632 the unpaid crews of Flemish frigates rioted in Cadiz.⁸²

Sailing of the Atlantic fleet was prevented by lack of seamen in 1606 and 1612. The armada planned for 1640 had to be cut by a quarter to fit available manning after the disaster of the Downs, and by a half in 1643 when there was a shortfall of 1200 seamen. Failure of funding restricted the armada's operations to a few days in 1626, and lack of ships in 1644 kept the armada in port for the entire year. But what is more remarkable is that armadas were equipped and put to sea in almost every year between 1617 and 1670. In a period of incessant warfare and with no economic recovery in sight, the Monarchy's naval forces experienced mixed fortunes in battle: crushing defeat by the Dutch in 1639 at the Downs, but before that, resounding successes against the Dutch in the Straits in 1621, and in the expedition of 1624 which expelled the Dutch from Brazil.

Wherever one looks at naval forces in this period, one finds acute shortages of seamen and pressing shortages of money for fleets: Cromwell's navy was owed over £700,000; Louis XIII's navy was debilitated by monetary chaos resulting from Richelieu's

⁸¹ AGS: GA 1142, Juan de Castro y Castilla to Philip IV, 5 and 11 August 1635, Cadiz, with annotated response of the *Junta de Armadas*.

⁸² AGS: GA 3215, *consultas, Junta de la Expedición de Galeras y Armada*, 5 and 6 June 1643, with copy of García de Toledo's harangue to Flemish crews, 26 May 1643, Puerto de Santa María.

manipulation of coinage and vast borrowing to meet the costs of war; even in Holland, with the strongest economy in Europe, taxation at barely tolerable levels still left insufficient to fund naval forces. Spain was therefore different only in the degree to which the alarming effects of rising naval expenditure were experienced in seventeenth-century Europe.

Abbreviation

AGS = Archivo General de Simancas

GA = *sección Guerra Antigua*, with number of *legajo*