IBERIAN NAVAL POWER, 1000–1650

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AT the beginning of the eleventh century, one would have assumed the future naval power of the Iberian Peninsula would be the Caliphate of Cordoba. The Christian kingdoms of Castile, Aragon and the counties of Catalonia, were small entities restricted to the northern portion of the peninsula, while the kingdom of Portugal did not yet exist. The Caliphate of Cordoba on the other hand had a highly developed naval organisation, due in large part to the Viking raids of 844. In that year a fleet of approximately a hundred longships attacked and sacked Lisbon, Seville, Cadiz, Medina Sidonia, and Algeciras. They were eventually driven off, but the raids had made an impact on the Muslim government. The response was to establish permanent arsenals and squadrons at the coastal cities along with a series of coastal watchtowers. When the Vikings returned in 859 they found the Caliphate to be a much tougher opponent and, though able to sack Algeciras, they suffered a series of defeats that discouraged them from ever returning in force.

By 1000 a sophisticated naval administration had developed in the caliphate headed by the *amir al-bahr*, who was responsible for the administration of the port squadrons and the arsenals. As such the admiral was responsible for the security of the entire coastline. The breakup of the caliphate in 1002 saw the office of the *amir al-bahr* disappear, although it would reappear under the later Muslim administrations of the Almoravids and the following Almohads. This administration would be absorbed when Castile finally captured Seville in 1248 and would form the basis for its naval administration.

Compared to this centralised approach to naval warfare, the Christian kingdoms relied on a rather *ad hoc* system in which the defence of the northern coast was left to local ports. Part of the reason for this was that Castile and Aragon were occupied with expanding their kingdoms southward on the peninsula. However, by the twelfth century both kingdoms were beginning to augment their naval presence primarily in a response to their growing maritime commerce and the problem of endemic piracy. The line between piracy and commerce was often blurred and merchants often preferred to use galleys, which could quickly switch to an offensive posture when a target of opportunity presented itself.

Whereas the use of the galley for commerce and warfare had a long history in the Mediterranean, it was also the preferred warship in the Bay of Biscay at this time. In 1120 the bishop of Santiago de Compostella hired a Genoese ship-wright to build two bireme galleys at the local arsenal to combat Muslim

pirates.[1] Muslim pirates operating on the north coast were a continuing problem in the tenth and eleventh centuries, but this was somewhat diminished by the establishment of the kingdom of Portugal and the fall of their base at Lisbon in 1147. The galley would remain the preferred warship in the Atlantic well into the fourteenth century. The most common warship in the major battles fought between Castile and Portugal in the thirteenth and fourteenth centuries was the galley, though by the thirteenth century the northern ports of Galicia and the Basque region were beginning to use armed keels, clinker-built ships based on Viking construction techniques. While primarily a merchant vessel, a keel could be quickly transformed into a warship with the addition of light castles fore and aft. In the siege of Seville in 1248 these northern vessels were used to blockade the Guadalquivir River to prevent Muslim vessels from relieving the city.

The twelfth century saw the expansion of the naval power of Castile, Aragon and Portugal, but these nascent naval powers were not dominant in any sense. Aragon was rapidly expanding its maritime presence in the Mediterranean following its merging with Catalonia in 1137. In an attempt to stamp out the endemic piracy emanating from the Balearic Islands, the count of Barcelona enlisted the help of Pisa in an expedition against the islands. Likewise the short-lived conquest of Almería in 1147 by a combined force from Castile and Aragon relied heavily on Genoese ships.[2] The Portuguese, while having some success at sea against Muslim forces, still did not have a fleet sufficient to threaten them effectively. In 1182 the Portuguese attacked Ceuta with twenty-one galleys, but were overwhelmed by a defending Muslim fleet of fifty-four vessels.[3] All of these states were relying heavily on private vessels for naval operations. While for specific undertakings the monarchies might build some vessels, none of them maintained a royal fleet. In large part this was due to the fact that the states had not consolidated their territories or authority, nor had they the fiscal mechanisms to maintain a permanent fleet.

The thirteenth century would see a number of profound changes in how naval warfare was conducted and organised. Much of the change was brought about by the consolidation of the territorial boundaries of Portugal, Castile and Aragon by the mid-thirteenth century. By 1251 Alfonso III of Portugal had expelled the Muslims from the Algarve, while Castile had captured Seville in 1248 and the mouth of the Guadalquivir River. The result of this expansion was that Castile found itself in possession of two significant coastlines separated by the sometimes hostile kingdom of Portugal. Aragon had expanded rapidly also, first by capturing Mallorca in 1229 and then by the complete conquest of Valencia in 1245. By 1250 the Crown of Aragon controlled the eastern seaboard

[1]   Cesáreo Fernández Duro, *La marina de Castilla* (Madrid, 1995), 20.

[2]   Antonio de Capmany y de Monpalau, *Memorias históricas sobre la marina, comercio y artes de la antigua ciudad de Barcelona* (Barcelona, 1961), vol. I, 30–1.

[3]   Armando Da Silva Saturnino Montiero, *Batalhas e combates da marinha portuguesa, 1139–1521* (Lisbon, 1989), 16.

of the Iberian Peninsula as well as the strategic island of Mallorca. The rapid expansion of all the kingdoms and decreasing open territory also meant that they would soon be involved in naval operations against each other as well as against the Muslims. By the second half of the thirteenth century these monarchies began to solidify their power and authority with attempts to regulate maritime trade and to control and monopolise maritime violence along their coasts. It is no coincidence then that the first state naval organisations began to appear at this time and while they had much in common, they also differed substantially. In a sense, the problems with financing and political authority encountered by these nascent organisations were precursors of the difficulties that would bedevil the Spanish monarchy in the sixteenth and seventeenth centuries.

Aragon by the second half of the thirteenth century had expanded its interests to North Africa, and in doing so had come into direct conflict with Angevin pretensions for control of the Mediterranean. When the Aragonese invaded and captured Sicily in 1282 they obtained a strategic location and, more importantly, absorbed a naval administration dating back to the Norman period. For a period of thirteen years Aragon was able to operate a permanent royal fleet on a year-round basis. The reason this was sustainable was that the Crown of Aragon was able to establish a centralised naval organisation under the control of the office of the admiral. The old Norman and Hohenstaufen administrations provided an organisation and network of arsenals capable of maintaining a fleet. More importantly, Sicily had an established system of taxes for supporting the fleet so that the crown did not have rely on Iberian sources for funding, which would have been problematic at best.[4] The result was that, until the Aragonese left Sicily by treaty in 1295, the Catalan-Aragonese fleet was one of the most effective naval units in the Mediterranean.

The Crown of Aragon also had the additional asset of an established maritime community in Catalonia that designed and built warships for the fleet. The result was the design of galleys with particularly high forecastles and poops to accommodate and protect the deadly accurate Catalan crossbowmen. This enabled the fleet to engage the much larger Angevin fleet, which used galleys with low bulwarks, and to defeat it on a consistent basis.[5] The Catalan community also provided experienced commanders to the fleet. The combination of the Sicilian and Catalan maritime communities, organised under the control of a central naval authority, proved highly effective and was one factor contributing to the collapse of French ambitions in the Mediterranean during the thirteenth and fourteenth centuries. However, when the Catalan-Aragonese fleet left in 1295, the system essentially collapsed. The Sicilians lost most of the officer corps and the amphibious units. For the Crown of Aragon it was an issue of

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[4] Lawrence V. Mott, 'The Best Manned Fleet Ever Beheld: The Catalan-Aragonese Fleet in Sicily 1282–1295' (Ph.D. dissertation, Univ. of Minnesota, 1999), 172–95.
[5] Lawrence V. Mott, 'The Battle of Malta: Prelude to Disaster', in Donald Kagay and L. J. Andrew Villalon, eds, *The Circle of War in the Middle Ages* (New York, 1999), 164–6.

finances. From 1285 until 1348 the Crown was constrained by the union of Aragon and Valencia, which restricted the king's ability to impose any new taxes. This political fragmentation ensured that the Crown would not be able to introduce fleet taxes in any form. Without consistent funding for the fleet, the centralised organisation developed in Sicily could not be maintained in Aragon. The office of the admiral would remain, but it only controlled the Arsenal and ships at Barcelona and did not have the overarching control of the other ports of the kingdom as it had in Sicily. The Catalan fleet was still a force to be reckoned with as the Genoese discovered in the loss of their fleet while fighting for the control of Sardinia in 1353. In 1382 the Catalans would defeat a Milanese fleet, ensuring that Sicily stayed in the Aragonese sphere of influence. However, the inability to impose a fleet tax and a small population base would constrict Catalan-Aragonese naval power.

Castile during the thirteenth and fourteenth centuries was confronted with a somewhat different set of problems. Whereas Fernando III had appointed an admiral to command the fleet assembled on the north coast for attacking Seville in 1248, there is no mention of any office of the admiral.[6] However, by 1254 under Alfonso X there appeared the office of the *almirantazgo*. What evidence does exist suggests that the Crown had simply absorbed the existing Muslim naval administration and modified it for its particular needs. Unlike the office of the admiral in Aragon, the *almirantazgo* had direct control over the arsenals and ports in Castile as well as responsibility for regulating maritime commerce in the kingdom. Moreover, the king of Castile had substantially more authority to raise taxes to fund the fleet.

However, Castile had its own set of problems. Because of the location of Portugal, Castile found itself in control of two separate coastlines with substantially different environments and maritime traditions. The Mediterranean and the Strait of Gibraltar required a different set of naval forces from those required for operations in the Atlantic and the Bay of Biscay. The initial solution was to divide the *almirantazgo* into two districts. One was centred at Seville and responsible for the Strait of Gibraltar and the Mediterranean, while the other was at Burgos and was responsible for the Atlantic. The geographical reality necessitated this division, but it did not change the fact that Castile would have to marshal and operate naval units with distinctly different characteristics.

Castile also had a rather surprising problem with regard to ship design and construction. Whereas the northern ports had expertise in constructing the keels and cogs that were playing an important role in northern trade and naval warfare, this knowledge did not transfer to the realities of galley warfare as conducted around southern Castile and the Strait of Gibraltar. Castile still had to rely on Genoa to provide shipwrights, naval commanders and vessels for major operations, such as those conducted in 1284 and 1292 against Muslim forces. For the attack against Tarifa in 1292 the Castilian fleet under the command of

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6 Florentino Pérez-Embid, 'El almirantazgo de Castilla, hasta las capitulaciones de Santa Fe', *Anuario de estudios americanos*, 1 (1944), 10, 86.

the Genoese admiral Zacarias required eleven galleys from Aragon. In a letter to Zacarias, King Sancho IV recognised the necessity of obtaining Genoese experience in naval matters.[7] In a sense, the taking of Seville put Castile in a position from which it would never be able to escape completely. During the thirteenth and fourteenth centuries Castile would fight a series of naval battles with both the North African states and with Portugal for the control of the waters near the Strait of Gibraltar. All of these conflicts would require galley warfare, including the blockade of Seville by Portugal (1369–70) and the Castilian naval assaults against Lisbon (1384). Yet while Castile was conducting galley warfare in the south, throughout the fourteenth century it also had to confront growing hostilities with England in the Bay of Biscay and the English Channel. In 1350 hostilities broke out when twenty English warships raided a Castilian convoy of forty armed merchantmen and captured twenty in a battle known as Les Espagnols sur Mer. Though a peace treaty would end this conflict, Castile was soon dragged into the Hundred Years War. In 1372, a Franco-Castilian fleet crushed the English at the Battle of La Rochelle and in 1376 a Castilian fleet raided the English coast and sacked Walsingham. The Castilians would return in 1405 when hostilities broke out again, raiding Jersey and sacking Poole. What is of importance is that the vast majority of combatants were cogs and nefs common to northern waters, not the galleys employed by Castile in the South.

For this same period very little is known about the naval organisation of Portugal. While documents indicate there were royal galleys being operated by the Portuguese monarchy, there was no formal naval organisation as had developed in Castile and Aragon.[8] Unfortunately, there is a dearth of information concerning developments in Portugal from the late thirteenth to the fourteenth century. Initially, Portugal had shown itself to be the naval equal of Castile, but because it could not match Castile's resources, and possibly due to the lack of development of a strong naval organisation, Portugal's naval strength actually weakened while that of the other Iberian powers was strengthening.

As all of these states discovered, naval warfare was an expensive proposition and one of the most cost-effective ways to conduct warfare against an opponent was indirectly through the use or tacit support of pirates. However, as these Iberian kingdoms began to rely on maritime commerce for revenue the regulation of this form of violence became increasingly important. The unregulated piratical activities of a subject could quickly drag the kingdom into a conflict or commercial reprisals with the kingdom or city of the offended party and that might not be in anyone's interest. Governments usually responded to acts of piracy by another city or country against one of its merchants by seizing the goods of the offending party in its port, or by authorising reprisals. The Castilian-Aragonese War of 1357 was started when Catalan pirates attacked

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[7] Fernández Duro, *La marina de Castilla*, 52.

[8] Da Silva Saturnino Montiero, *Batalhas e combates da marinha portuguesa*, 28.

Genoese ships in Castilian waters.[9] The result was a nasty war in which Aragon came out the worse for wear.

The Mediterranean had a long history of piracy and had developed mechanisms for regulating it. In both Castile and Aragon those wishing to embark as corsairs were required to place a deposit with the authorities that would be forfeit if the corsair attacked friendly shipping. In Castile, the *almirantazgo* was responsible for regulating piracy. In Aragon during the War of the Sicilian Vespers (1282–1302) the admiral controlled these activities, but following 1295 the bailiff general of each realm was responsible.[10] In both kingdoms there was a stipulation that, if the deposit did not cover the damage to a friendly party, the admiral or the bailiff general would pay for any indemnities incurred by licensed corsairs. In both kingdoms, the Crown received one fifth of the booty collected by a licensed corsair. As pointed out by N. A. M. Rodger in this volume, this system for regulating piracy was essentially lacking in Atlantic waters.

Because the expense of maintaining even the local port squadrons was considerable, besides licensing private individuals both Castile and Aragon would often supply galleys to private individuals for corsairing. The thirteenth-century law code called the *Siete Partidas* outlined the different levels of governmental involvement that might occur. The three different types of royal involvement were:

1. Where the crown provided the ships and their equipment, the provisions and arms, and the pay for the crews.
2. Where the crown provided the ships, their equipment and arms, but others organised the squadron and provided the provisions and pay.
3. Where the crown provided only the ships and their equipment, and others supplied the arms, provisions and pay.

The percentage of loot claimed by the crown varied depending on the level of royal participation. The advantage of the last example of royal participation was that it allowed the Crown to keep a number of vessels in service at a minimal cost. This point was crucial for Aragon, because there the ability of the king to tax was severely limited, and maintaining a fleet was an expensive proposition. By the late thirteenth century 75–80 per cent of the cost of operating a galley went to pay the crews. It is little wonder then that when the fleet was not in service, the galleys were hauled out and stored at the main arsenals at Barcelona and Valencia, while the crews were mustered out of service. Following the plague of 1348, the problem of finding crews and paying for them would become progressively more intractable. Pedro IV tried futilely to impose controls on the pay of rowers. Up to the sixteenth century the oarsmen were still

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9   Thomas N. Bisson, *The Medieval Crown of Aragon* (London, 1986), 112.
10 Andrés Diaz Borras, 'La lucha anticorsaria en Valencia durante la edad media. El episodio protagonizado por Pere Cabanyelles (1417–1418)', *Revista de Historia Naval*, 7 (1989), 115–16. Mott, 'The Best Manned Fleet', 90, 181–3.

freemen, but by the mid-sixteenth century the bulk of the rowers in the galleys would be convicts and slaves, if for no other reason than to hold down the cost of operating the galleys.[11] For Castile the problem lay not only in finding funds to operate a fleet but also in the case of the north coast there was the problem of ship maintenance when the vessels were laid up. Whereas galleys could be hauled out and stored, this option was not available in the North where cogs and nefs were the predominant warship types. This problem would only become worse as the full-rigged ship developed in the fifteenth century. As the kingdom lacked the resources to maintain a permanent fleet, the only recourse was to charter armed merchantmen as needed. Neither Castile nor Aragon could simply requisition ships without paying for them, but even paying for the use of armed merchantmen during times of war proved useful in relieving the government of the cost of a permanent fleet. It is a system that worked well until the late sixteenth century. In part the decision to use armed merchantmen was driven by the changing nature of warfare in the Atlantic. During the fourteenth century, in all of the naval battles fought between Castile and Portugal the primary combat vessel had been the galley. However, by the fifteenth century both combatants were beginning to use full-rigged vessels. Nothing exemplifies this change better than the Battle of Gibraltar between Castile and Portugal in 1476. Castile had assembled a squadron of three full-rigged *naos* from Vizcaya, five *carabelas*, and four Catalan galleys to blockade the Strait of Gibraltar. In the spring of 1476 this squadron intercepted a group of four Portuguese and Genoese ships, capturing two and burning the others.[12] What is of importance is that the main combatants were full-rigged ships armed with wrought-iron cannons propped up over the caprails in the waist of the ships.[13] While the galleys would remain the predominant combat vessel in the Mediterranean, the full-rigged sailing ship had come to dominate combat in the Atlantic and North Sea.

Gunpowder itself was not a new development in the Iberian Peninsula. Small cannons began appearing on both Castilian and Aragonese vessels in the fourteenth century. Ambiguous comments in the early fourteenth century concerning Castilian ships firing *barras de hierro* (iron bars) appear in several chronicles. An inventory of the fleet sent to Naples in 1419 by Alfonso V of Aragon shows that at least three galleys carried *bombardas* and that two of them had two cannons each.[14] The wrought-iron cannons used in both the Atlantic and the Mediterranean from the fourteenth well into the sixteenth century were

[11] David Goodman, *Spanish Naval Power: Reconstruction and Defeat, 1589–1665* (Cambridge, 1997), 215. John F. Guilmartin, Jr, *Gunpowder and Galleys* (Cambridge, 1980), 111.
[12] Fernández Duro, *La marina de Castilla*, 202.
[13] A famous votive painting of the battle done by a father to honour his son who died in the battle clearly shows the full-rigged ships and cannons. The painting is located in the Parochial Church of Zumaya.
[14] Antonio de Capmany y de Monpalau, *Ordenanzas de las armadas navales de la Corona de Aragon* (Madrid, 1787), appendix, 4–7.

anti-personnel weapons, if for no other reason than that they lacked both the power and accuracy to make them effective ship-killing instruments. In both the Atlantic and the Mediterranean combat at sea was still being decided at close quarters and ship losses were still due either to fire or grounding.

The end of the fifteenth century brought a number of profound changes to the Iberian Peninsula. In 1479 Aragon and Castile were technically joined under Ferdinand and Isabella. However, while the two kingdoms were joined politically, there were institutional, fiscal and economic differences that would haunt this united Spain in the sixteenth and seventeenth centuries. Moreover, Castile would find itself heavily involved in the Mediterranean while at the same time it tried to establish an Atlantic empire. Aragon would provide much of the expertise for Mediterranean naval operations, but political, demographic and economic turmoil from the late fourteenth into the fifteenth century had sapped the kingdom of much of its resources. Portugal, while being shut out of the Mediterranean by Castile, had begun to establish an overseas empire first in West Africa and then in the Indian Ocean. In 1502 following the voyage of Vasco da Gama to India, the Portuguese rapidly expanded their influence throughout the Far East through the use of armed caravels and carracks. In 1510, the Portuguese took Goa in India and then Malacca in 1511. The primary vessels used for Portuguese expansion were called carracks. The distinctive feature of these vessels was their sheer size and built-up forecastles and poops. Though they carried few large cannons, the high superstructure bristled with small wrought-iron weapons. Whether by design or sheer fortune this combination of size and numerous anti-personnel weapons proved the perfect combination for naval warfare in the Indian Ocean and South-east Asia. Although the Portuguese were faced with local opposing forces that were often more numerous, there was no organised naval force with ships large enough or sufficiently armed to challenge them. The Turks would contest the Portuguese control of the Indian Ocean throughout the sixteenth century, but they would use Mediterranean galleys that lacked the range and sea-keeping ability to gain control of the ocean.[15] Even after Portugal came under Habsburg rule in 1580 the Portuguese operated their overseas empire virtually independently of the Spanish government. The entire enterprise was operated by the state, and the initial success of the Portuguese at sea suggests that a highly efficient naval organisation operated from Lisbon, though there have been few studies of it. However, as has been suggested by Jan Glete, because Portugal faced no European threat in South-east Asia during the sixteenth century there was no impulse to develop faster and more powerful ships.[16] While the Portuguese continued to use the large carracks into the seventeenth century, the carrack fell out of use in Europe because of the inability of this type of vessel to contend with the faster, heavily armed and more manoeuvrable galleons appearing in northern waters. When confronted with the swifter

[15] Jan Glete, *Warfare at Sea, 1500–1650: Maritime Conflicts and the Transformation of Europe* (London, 2000), 76–84.
[16] Glete, *Warfare at Sea, 1500–1650*, 89.

merchantmen of the Dutch and English armed with cast-iron cannon in the mid-seventeenth century the Portuguese found it impossible to prevent them from taking over their trade in South-east Asia. Spain was also establishing an overseas empire during the sixteenth century, first in the Americas and later in Asia. Charles, grandson of Ferdinand and Isabella, became heir to the growing empire shortly before the Aztecs and Incas were conquered in his name. The inclusion of Spain into the Habsburg Empire would eventually draw it into a series of conflicts that would literally span the globe. From 1494 until 1559 Spain was engaged in a series of wars with France for the control of Italy. It was also in a conflict with the Ottoman Empire for control of the western Mediterranean that would last until 1580. Spain also became the champion of Roman Catholicism in the era of the Protestant Reformation. Besides these conflicts, Spain was attempting to establish itself in the New World and protect the developing trade with its colonies. In confronting these multiple challenges, the problem was that Spain was neither politically nor fiscally unified.

To provide money for the fleet required not only the approval of the parliament of Castile but also separate approval from the Crown of Aragon. Initially Spain relied on the *averia*, a tax on goods transported to the New World, to pay for naval forces to protect the New World trade, but this was changed to a direct tax called the *milliones* in 1590 in order to build a permanent fleet. However, this tax could only be applied to Castile as the *cortes* of Aragon refused to approve it. Separate funds from the papacy, known as the Three Graces, were used to support the galleys operating in the Mediterranean. Besides having disparate sources of funding for its far-flung naval commitments, the Habsburg government was plagued by a series of bankruptcies in 1560, 1575, 1607, 1627, 1642 and 1652. The periodic shortage of funds directly affected the fleets' ability to function.[17]

From 1479 until the truce with the Ottoman Empire in 1580, the bulk of the funds went to support the large galley fleets required to counter Turkish incursions into the western Mediterranean. During this time the Spanish fleet would fight major battles at Tunis in 1535, Prevesa in 1538, Djerba in 1560 and Lepanto in 1571. The Spanish fleet also had to combat the plague of pirates that was devastating the eastern seaboard of the Iberian Peninsula. Operating galleys was increasingly expensive and the cost of operating a galley from 1523 to 1587 more than tripled.[18] Equally important, while warship design was rapidly evolving in the Atlantic, the galley was still the dominant warship in the Mediterranean in the sixteenth century. Warfare there was still as much amphibious as naval in nature, and this, combined with the shoal waters and fickle winds of the Mediterranean, meant that galleys were still the best warships for the region. However, by their very design galleys were essentially useless for warfare in the Atlantic. Whereas they were employed sporadically by Spain in

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[17] Goodman, *Spanish Naval Power*, 39–60.
[18] Guilmartin, *Gunpowder and Galleys*, 270.

the Netherlands, the Bay of Biscay and even the Caribbean, the narrow hulls and low freeboard of the galley made it at best marginally useful in the Atlantic. The result was that Spain had to maintain a large fleet that essentially could not be deployed outside the Mediterranean to support Spain's growing overseas empire.

The enormous cost of maintaining a year-round fleet of galleys in the Mediterranean is undoubtedly one of the reasons the Spanish government continued to lease armed merchantmen for protection of the New World trade and for naval operations against the French and then English well into the 1570s. While the ability to draft private ships into government service relieved the government of having to maintain a permanent fleet, it also brought its own set of problems. Since the government was attempting to use merchant vessels for military purposes, it was in its interest to see that ships being constructed had features suited for naval warfare, the main consideration being size. To this end the government tried to influence the merchant community to build larger ships by issuing a regulation in 1511 giving loading preferences at ports to larger ships, and in the 1560s Philip II began supplying subsidies for the construction of larger merchantmen.[19] The problem was that the merchant community preferred smaller vessels because they were easier to unload and they handled better in the shoal waters of the Netherlands and the North Sea. Spain was in a difficult position. It could not afford two separate fleets and yet it had to protect shipping in the New World as well as confront the Ottoman Empire in the Mediterranean. First the French in the 1530s and then English in the 1560s took advantage of the situation by sending privateers into the Caribbean to raid towns and capture shipping. In 1526 the king responded to the increasing piracy by ordering all merchant vessels in the Atlantic to travel in convoy. Between 1536 and 1543 the Crown issued a series of additional ordinances concerning the outfitting and manning of ships for the New World trade. By 1564, a system of two yearly convoys to America had been established, but this proved to be only a partial solution.[20] In 1567 the Crown was forced to build twelve small galleons for defence of the convoys, which in turn were replaced by larger versions in 1583. These vessels constituted the first permanent royal Spanish fleet outside the Mediterranean.[21]

One of the major criticisms levelled at the Spanish government concerning the organisation of the Armada of 1588 has been the fact that there were so many Mediterranean ships in the fleet, which admittedly fared poorly in the fighting and particularly the storms the fleet encountered in the North Sea and

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[19] William D. Phillips, 'Spain's Northern Shipping Industry in the Sixteenth Century', *Journal of European Economic History*, 17.2 (1988), 77.

[20] Carla Rahn Phillips, *Six Galleons for the King of Spain* (Baltimore, 1986), 9–13.

[21] These vessels are often considered the first permanent Spanish royal fleet. However, during the sixteenth century the Crown already maintained permanent galley fleets in the Mediterranean. Glete, *Warfare at Sea*, 150–1.

off Ireland. Yet when one looks at the strategic position Spain was in, it is no wonder that the fleet consisted of so many Mediterranean vessels. A truce with the Ottoman Empire had only been signed in 1580 and whereas the crown had begun by building more galleons suited for Atlantic duty, there were few available in the 1580s. It took time to create a new fleet suited for the Atlantic rather than Mediterranean combat. Of the thirty-four ships lost from the 1588 fleet of a hundred and thirty, either in conflict or on the voyage home, none was a Spanish-built galleon.[22] The Armada disaster brought a series of reforms in the Spanish fleet. Under Philip III new naval ordinances appeared in 1607, 1613 and 1618 designed to standardise the construction of galleons and ensure they had characteristics that could serve the fleet. Moreover, the government formed the Junta de Armada to oversee the fleet. Up to the sixteenth century, the *almirantazgo* had controlled naval matters, but it had been dissolved and naval matters had been handled in the *Consejo de Guerra*.[23] The reforms created a revitalised Spanish fleet in the first quarter of the seventeenth century. Until the 1630s, the Spanish fleet was a formidable force and had success against the English and the Dutch. For example in May 1624, the Dutch invaded Brazil but within six months the Spanish had marshalled a fleet and ousted the Dutch after defeating their fleet. In 1625 the Spanish fleet successfully repelled an attack on Cadiz by a combined Anglo-Dutch fleet. However, these successes were soon undermined by series of major setbacks. In 1635 the French declared war on Spain and in 1638 French forces crossed the Pyrenees and burned or captured several galleons under construction at Pasajes. The French fleet went on to destroy a fleet of twelve Spanish galleons and blockade the north coast. In 1639 Spain responded by assembling a fleet of one hundred ships with the intention of sailing into the Channel and destroying the French and Dutch squadrons there. However, in September the Dutch fleet caught the Spanish one at the Downs and utterly destroyed it. This disaster was followed in 1640 by a revolt in Catalonia, and then one in Portugal. In 1648 treaties ended most of the conflicts of the Thirty Years War, but Spain and France would fight on until 1659. Exhausted and overextended in the 1650s and 1660s, Spain could not adequately protect its colonies or even its home waters. France had usurped Spain's position as the dominant power on the Continent, while England and the Netherlands became the dominant naval powers. In 1668 Spain was forced to recognise Portugal's independence and the inroads made by the French and English into the Caribbean and North America.

A number of criticisms have been levelled at both the Spanish and Portuguese for their inability to thwart the incursions of the English, Dutch and French into

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[22] Carla Rahn Phillips, 'The Caravel and the Galleon', in Richard W. Unger, ed., *Cogs, Caravels and Galleons: The Sailing Ship 1000–1650* (London, 1994), 105–6.

[23] Francisco-Felipe Olesa Muñido, *La organización naval de los estados mediterraneos y en especial de España durante los siglos XVI y XVII*, 2 vols (Madrid, 1968), 384–8, 450.

Map 1. The Western Mediterranean

their overseas empires. The most persistent charge has been that neither country modified its ship designs to counter the fast race-built galleons and armed merchantmen being produced by their opponents. Moreover, there has been criticism of Spain's inability to adopt the cheaper cast-iron artillery and its continued use of land carriages for many of its naval guns instead of using the four-wheeled gun trucks developed at the end of the sixteenth century.[24] There is no doubt that Portugal persisted in the use of the carrack in the Indian Ocean and Far East long after that ship-type had disappeared in Europe. However, it had served extremely well against both the Ottomans and Indian Ocean opponents. It is easy to criticise the Portuguese for clinging to a design in the face of change, but most institutions are loath to abandon a proven design until it has been patently shown to be defective or outmoded. A series of hot debates had revolved around changing the design, and the Portuguese were well aware of the shortcomings. However, it was not clear that a change in design was necessary or prudent.[25] Moreover, between 1640 and 1668 Portugal was engaged in a revolt against Spain that undoubtedly put a damper on any movement to change ship designs or adopt newer, larger ordinance.

In the case of Spain, the problem was quite different. It has been noted that each country designed galleons to fit particular national needs.[26] By the seventeenth century Spain controlled an empire that literally stretched around the world. The design of Spanish galleons had to take into account a variety of needs of a navy seriously overstretched. The Spanish galleon not only had to operate as a warship but also had to have the capacity to act as a troop carrier or to transport needed supplies to distant colonies. When seen in this light it is clear that the Spaniards were not behind in ship design compared to the Dutch and English, but simply making design decisions based on need. The English could afford to build race-built galleons because they had no need to transport men or supplies to a global empire. The Spanish had to design galleons that could do all of the tasks reasonably well. Spain's opponents did not have to stretch resources to cover a scattered empire and so were not saddled with having to make such compromises. The Spanish did have trouble in manufacturing cast-iron guns and the Dutch and English generally had cannon firing heavier shot.[27] However, the major problem was numbers. Spain had to produce guns not only for the Atlantic fleet, but also for the Mediterranean galleys and more importantly for numerous forts scattered around the globe. For this reason the artillery was removed from a ship once it docked at a port and often was used on land for defence or a land campaign.[28] To this end the carriages of the

[24] For a discussion of these perceived short comings see Glete, *Warfare at Sea*, chapter 10. Goodman, *Spanish Naval Power*, 114–24, 145–9.

[25] Carla Rahn Phillips, 'Manuel Fernandes and His 1616 *Livro de traças de carpintaria*', *American Neptune*, 60.1 (2000), 7–29.

[26] Phillips, 'The Caravel and the Galleon', 102–4.

[27] Goodman, *Spanish Naval Power*, 148.

[28] Phillips, *Six Galleons for the King of Spain*, 91.

guns had to be adaptable. While the four-wheeled gun truck introduced by the English was more efficient at sea, it was nearly useless on land. The continued use of two-wheeled carriages by Spain was dictated by the necessity of having artillery flexible enough to serve on land or sea as needed.

In the seventeenth century Spain was confronted with a series of obstacles that any nation would have found nearly impossible to surmount. All of Spain's opponents were afflicted with some financial or political problems, but never to the degree nor in the same totality as Spain. Whereas the Iberian Peninsula was technically united from 1580 to 1640, the fact was that the government was split into three separate administrations that precluded the fiscal unity necessary to finance a large fleet. Moreover, whereas the Portuguese operated their maritime empire relatively independently, Spain found itself dragged into protecting it along with its own colonies. Spain was also forced into fighting a true two-ocean war in both the geographical and technical sense. Spain had to operate separate naval forces in the Mediterranean and Atlantic that could not operate well in the other's environment.

Strategically, all of the advantages lay with the Dutch, English and French. Given the primitive state of communications in the seventeenth century, Spanish colonies and convoys were easy targets, since by the time any defence could be mustered the raiders would have simply moved on. Spain's opponents, with few colonies to protect, had the luxury of designing and operating ships for raiding and privateering, while Spain on the other hand had lengthy lines of communication to guard. Its far-flung global commitments forced Spain into making a series of naval decisions and compromises that her opponents never had to confront.

When seen in this light, Spanish and Portuguese naval power achieved a great deal. They thwarted attempts by the Ottoman Empire to control the western Mediterranean while at the same time helped establish a global network of colonies and outposts. Although the other European powers would make inroads into Spanish holdings and effectively replace Portugal in Asia, Spain and Portugal held on to the vast majority of their holdings in the Americas. By the second half of the seventeenth century, although the Spanish navy was in decline, it had effectively secured Spain's overseas empire for at least another century. Both Spain and Portugal had evolved effective naval forces and administrations in the fifteenth and sixteenth centuries, laying the foundation for the navies which competed more or less globally in the era described by Mahan.