NEW APPRECIATIONS IN HISTORY 13

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The Armada Campaign of 1588

by Simon Adams

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59a Kennington Park Road, London SE11 4JH

The chart on the front cover shows the course of the Armada. It is one of a series of engravings by Augustine Ryther from charts by Robert Adams, which were published as illustrations to Petruccio Ubaldini's ***A Discourse concerninge the Spanishe Fleete*** *(1590)*
The portrait on the back cover *is the* ***Armada Portrait*** *at Woburn Abbey, now attributed to George Gower (1540-96). It is the best known of several contemporary paintings of Elizabeth I in triumph after the defeat of the Armada. Elizabeth's goddess-like image and the prominent symbolism (the crown and the globe) are typical of the highly allegorical style employed in royal portraits between 1588 and 1603.*

Acknowledgements
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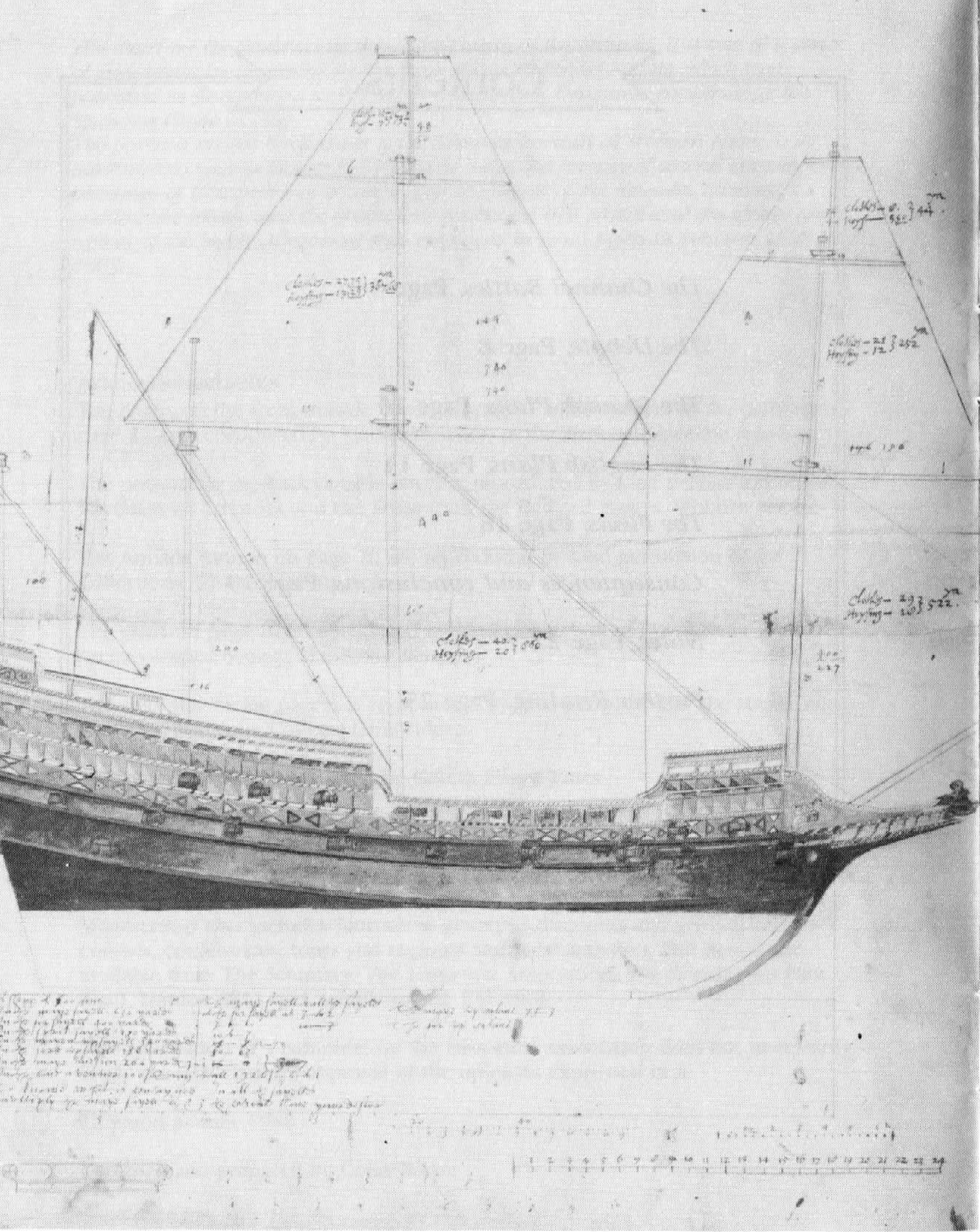


Contemporary pictures of specific Elizabethan warships are very rare. This plan (probably by the shipwright Matthew Baker) may depict the **Revenge** *or the* **Galleon Leicester.**

The Armada Campaign of 1588

Between 1585 and 1588 a state of undeclared war existed between England and Spain. During the course of those years, Philip II devised a final plan for the 'Enterprise of England'. It was probably the most ambitious military operation of the sixteenth century: a massive invasion to be mounted jointly by a fleet sent from Spain under Alonso Peréz de Muznán, duke of Medina Sidonia and the Army of Flanders commanded by Alexander Farnese, duke of Parma.

Between 18 and 20 May 1588 the 130 ships of the Felicissima Armada left Lisbon harbour.† Two months later 124 of them reached the mouth of the English Channel. The following fortnight saw a naval battle that has become one of the best-known of European history. Sir John Hawkins called it 'a matter far passing all that hath been seen in our time or long before'.[1] Yet if contemporaries had no doubts about its significance, the way it was conducted and its results have remained subjects of controversy and debate.

†Dates employed here, unless otherwise noted, are those of the Julian calendar used in England in 1588. Spanish dates were ten days later.

The Channel Battles

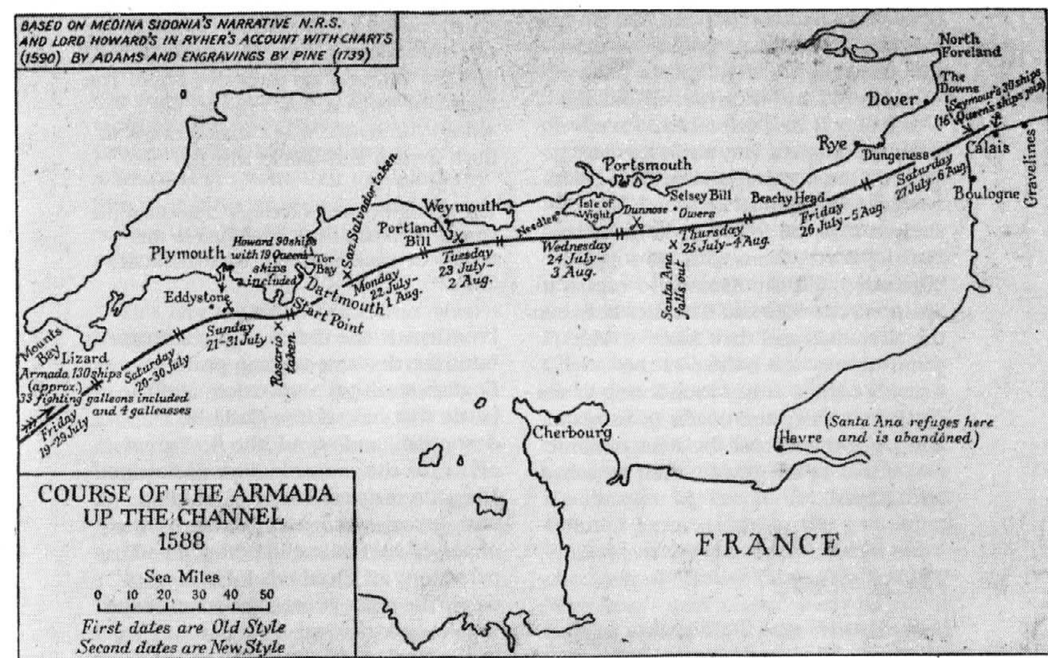
Like the battle of Jutland in the First World War, the Armada fight began with a series of mutual surprises. By the time their scouting pinnace spotted the Armada's first ships off the Lizard on 19 July 1588, the English commanders had become convinced that the chances of the Spanish fleet still arriving that summer were slender. The greater part of the English fleet (nearly 100 vessels of all sizes) had been concentrated in May at the advanced harbour at Plymouth in order to attack the Armada in its bases. The

fleet had been driven back from the Spanish coast in the previous week by the same winds that blew the Spaniards north. Now a new attack on the annual silver fleet from the Americas was being prepared. The duke of Medina Sidonia, on the other hand, had expected to encounter only an advanced squadron under Sir Francis Drake at the entrance to the Channel, and intended not to proceed beyond the Isle of Wight until he had made contact with Parma. He believed the Lord Admiral, Charles, Lord Howard of Effingham, and the majority of the English ships to be in the Straits of Dover. Only on the night of 20 July did he discover that both Howard and Drake were in Plymouth, and that he would have to fight his way up the Channel.

The surprises continued. Howard and half his fleet (some 50 to 60 ships) were able to escape from Plymouth's narrow harbour on the 20th, though in their haste many ships failed to load adequate food and ammunition. The Spaniards were disconcerted to discover, as Howard and his ships sailed round them to gain the wind (the 'weather gauge') on the night of 20-21 July, that the manoeuvrability of the English ships was no myth. When the English attacked from the west on the 21st, on the other hand, they were so impressed by the Armada's defensive formation that they 'durst not adventure to put in among them, their fleet being so strong'.[2] Two Spanish ships were crippled and had to be abandoned, the *Nuestra Señora del Rosario*, flagship of the Andalusian squadron, and the pay-ship *San Salvador,* but both as a result of accidents, the former from a collision, the latter by a gunpowder explosion.

Howard intended to wait for his remaining 40 ships and then 'so to course the enemy as that they shall have no leisure to land'.[3] But that night the English were thrown into disorder. Drake, leading the fleet in the *Revenge,* disappeared. Though he reappeared the next day (22 July), having captured the *Nuestra Señora*, the English did not reassemble until the evening. Medina Sidonia, now off Portland Bill, took the opportunity to concentrate 43 of his major warships in the rear of the Armada. On the 23rd the wind swung to the north-east for the first time. The Spaniards attempted to cut off an apparently isolated English squadron (led by Sir Martin Frobisher in the *Triumph*), and a confused and inconclusive general engagement ensued. Howard was now seriously worried by the rate at which ammunition was being expended and limited his activity the following day (the 24th) to an attempt to cut off the straggling *El Gran Grin*. He also reorganised his fleet by dividing it into a more manageable four squadrons commanded by Drake, Frobisher, John Hawkins and himself. On the 25th, despite a calm, Howard was tempted again by two further Spanish stragglers, the galleon *San Luis* and the hulk *Santa Ana*. Medina Sidonia returned to rescue his ships and a third general melée resulted. By this stage Howard's shortage of ammunition had become critical. Luckily, there was no beach suitable for a landing on the Sussex coast, and he could conduct his pursuit passively until he reached the straits of Dover. There he would be joined by Lord Henry Seymour and the remaining 40 ships of the fleet, while further ammunition should be waiting for him either at Dover or in the Downs.

The Downs, 'where thousands of ships may ride as safely as in any harbour of Europe', was assumed to be Medina Sidonia's goal as well.[4] It was the only anchorage that would both be large enough for his fleet and provide landing beaches for Parma's army. But the procession of the two fleets up the Channel on 26 and 27 July came to an abrupt end late in the afternoon of the



27th when the Armada suddenly anchored off Calais. Howard did the same and was then joined by Seymour. They knew that Calais harbour was too small to be of use to the Spaniards, and they suspected that the halt was intended to throw off their pursuit by leaving them to be sucked into the North Sea by the powerful tides of the Narrows, while Medina Sidonia made contact with Flanders.

In fact Medina Sidonia stopped for a more straightforward reason: his fear that his own less manoeuvrable ships would be carried away by the tide. He immediately informed Parma that he had reached Calais, but Parma (then at Bruges) did not receive the message until Monday, 29 July. He ordered the embarkation of his troops to begin and, in the evening, went to the coast himself. It was at Dunkirk at mid-day on the 30th that he learnt that the Armada had already been driven deep into the North Sea. Precisely in order to prevent Medina Sidonia and Parma joining forces, the English had attacked the anchorage with fireships at midnight on the 28th. Medina Sidonia had foreseen this manoeuvre and had ordered the ships of the Armada to slip their cables and return to collect their anchors after the fireships had burnt themselves out. Here he miscalculated, for on Monday morning it was clear that the Spaniards had been driven too far along the coast by the tide to return. Moreover, the English were quick to exploit the opportunity provided by the confusion to concentrate on individual ships. Off Gravelines the Spaniards suffered real losses to English gunnery: one ship (the *Maria Juan* of the Biscay squadron) sank; three others, the galleass *San Lorenzo*, and the Portuguese galleons *San Mateo* and *San Felipe,* ran aground.

More decisive was the weather, which had been ideal for the Armada during the past week. A sudden rain squall in the afternoon brought the

Gravelines battle to an end. On 30 July a strong gale threatened first to drive the Armada onto the Zealand Banks, then veered and blew it out into the North Sea. It may have been saved from the English, but a rendezvous with Parma was impossible, and there was no friendly port in which to shelter. Howard followed as far as the Firth of Forth; then, with his supplies exhausted, left the Armada to return to Spain via the Fair Isle Channel between the Shetlands and the Orkneys. The grim odyssey left a third of the Armada's ships either foundering at sea or strewn along the coasts of Scotland and Ireland and cost the lives of some two-thirds of the 30,000 men who had left Lisbon.

The Debate

In few battles was the disparity in the 'butcher's bills' so dramatic. William Coxe of Limehouse, captain of the pinnace *Delight*, was the one identified English casualty; the total killed and wounded in the battle was no more than one hundred, though losses from disease before and after may have been considerable. Damage to the English ships was minor. But the great majority of the 40 or so Spanish ships lost were victims of the return voyage. Only six ships were sunk or captured between 19 July and 1 August. On 29 July, particularly, many suffered damage which may have caused them to founder later, but the fleet had sailed through the Channel with its formation intact. The celebrated English artillery had failed. In the well-known words of one English gunner, 'so much powder and shot spent, and so long in fight, and in comparison thereof so little harm'.[5]

Had the Armada been defeated, and, if so, by whom? The contemporary response will be discussed below. After 1650, however, the question became an academic one for the technical issues raised by the battle ceased to be of relevance. Only in the nineteenth century did serious interest revive. The credit belongs to J.A. Froude, for whom the battle was a major event in both British and world history:

> The action before Gravelines ... decided the largest problems ever submitted in the history of mankind to the arbitrement of force.[6]

Froude saw the defeat of the Armada as both the decisive turning point in English maritime expansion, and the battle that halted 'the Catholic despotism' and saved 'the first great effort for the emancipation of Europe'.[7] His account was, however, riddled with errors, not least because he was obsessed by the incompetence and parsimony of Elizabeth I. His heroes were 'the poor protestant adventurers who fought through that perilous week in the English Channel and saved their country and their country's liberty'.[8] The battle remained a contest between David and Goliath, in which the maritime population of England took to the seas in their little ships in a naval version of the battle of Marathon.

Froude's dismissal of the 'wildly managed navy of the queen' underwent a major reappraisal at the end of the century.[9] In 1884-85 the Spanish naval officer Cesáreo Fernández Duro published the first major collection of documents relating to the battle. He saw the English victory as one of the cannon-armed warship of the future over the obsolete galley tradition; the Spaniards regarded artillery as a weapon 'poco noble' and had armed the Armada with only light guns.[10] Fernández Duro's verdict was sustained by the classical naval historians of the turn of the century, Michael Oppenheim, J.K. Laughton, and Julian Corbett. The modernisation of the Royal Navy was now seen as a central achievement of the reign of Elizabeth I. To Sir John Hawkins (treasurer of the navy between 1577 and 1595) went the credit for the construction of the new 'race-built' warships; Drake was the genius behind the new artillery tactics and naval strategy. For Corbett, Drake was 'the father of the art of warfare at sea' who first expounded 'the root ideas of the new English school that Nelson brought to perfection'.[11]

This late-Victorian orthodoxy was itself challenged in Michael Lewis's studies of the gunnery of the battle in the 1930s and 1940s. His series of articles on the 'Armada Guns' — a very clever piece of extrapolation from highly fragmentary evidence — led to an unexpected discovery. If the English retained an overall superiority in major artillery (1,972 guns distributed among 172 ships, opposed to 1,124 in 124 ships), the Spaniards, far from being equipped with only light pieces, possessed 489 heavy guns (cannon type) to 98. The Spaniards also had slightly more culverins (165 to 153); only in their 1,721 to 470 lighter demi-culverins, sakers and minions did the English have a significant advantage.[12] Lewis further observed that the Spanish ships carried a far greater amount of both powder and shot than the English. His conclusions suggested a convincing explanation for several of the mysteries of the battle. If culverin-type artillery had a longer range, and English tactics involved keeping out of the range of the Spanish heavy artillery, the English culverins (until they came in close at Gravelines) had been too light to inflict major damage on the Spanish ships. The secret of the English success lay not in their gunnery, but in the manoeuvrability of their ships and their skill as ship-handlers, which enabled them to avoid the close-in fight the Spaniards sought.

The 'Lewis thesis' provided the tactical explanation employed in the next generation of accounts: his own, the shorter essay of Lieutenant-Commander Waters, and the brilliant *tour de force* of Garrett Mattingly. In these the Nelson tradition was less obvious; more immediate was the comparison, more or less explicit in all three, with Fighter Command in the Battle of Britain. 1940 suggested many parallels with 1588 — though not always favourably, as in the rueful verdict of *The Times* on the escape of the *Scharnhorst* and *Gneisenau* in February 1942, that 'Vice Admiral Ciliax has succeeded where the Duke of Medina Sidonia failed'.[13] Yet the comparison also inspired a reappraisal of the context of the battle that emerges most clearly in Mattingly. Its significance lay less in the defeat of the Counter-Reformation or the winning of English naval supremacy, than in the checking of Spanish power. In R.B. Wernham's now classic study of Tudor foreign policy, *Before the Armada*, the battle became the crucial turning point in the creation of a new English foreign policy of opposition to a single hegemonic power on the continent.

Mattingly also inaugurated a new examination of the Spanish sources. Previous English accounts had rested largely on Fernández Duro; even the important chapter on the planning of the Armada in Leon van der Essen's biography of the duke of Parma had made little impact. Since the 1960s, however, the balance has been reversed dramatically, and the major discoveries have come from the Spanish side. Thanks to the archaeological investigation of the Armada wrecks off the Irish coast — the *Trinidad Valencera*, the *Santa Maria de la Rosa*, *El Gran Grifón*, and the galleass *Girona* — much more is now known of the Spanish ships than those of their opponents. The research of Geoffrey Parker, I.A.A. Thompson and others has led to further revisions. The 'Lewis thesis' (openly speculative about the Spanish cannon) has been overturned. Not only did the English

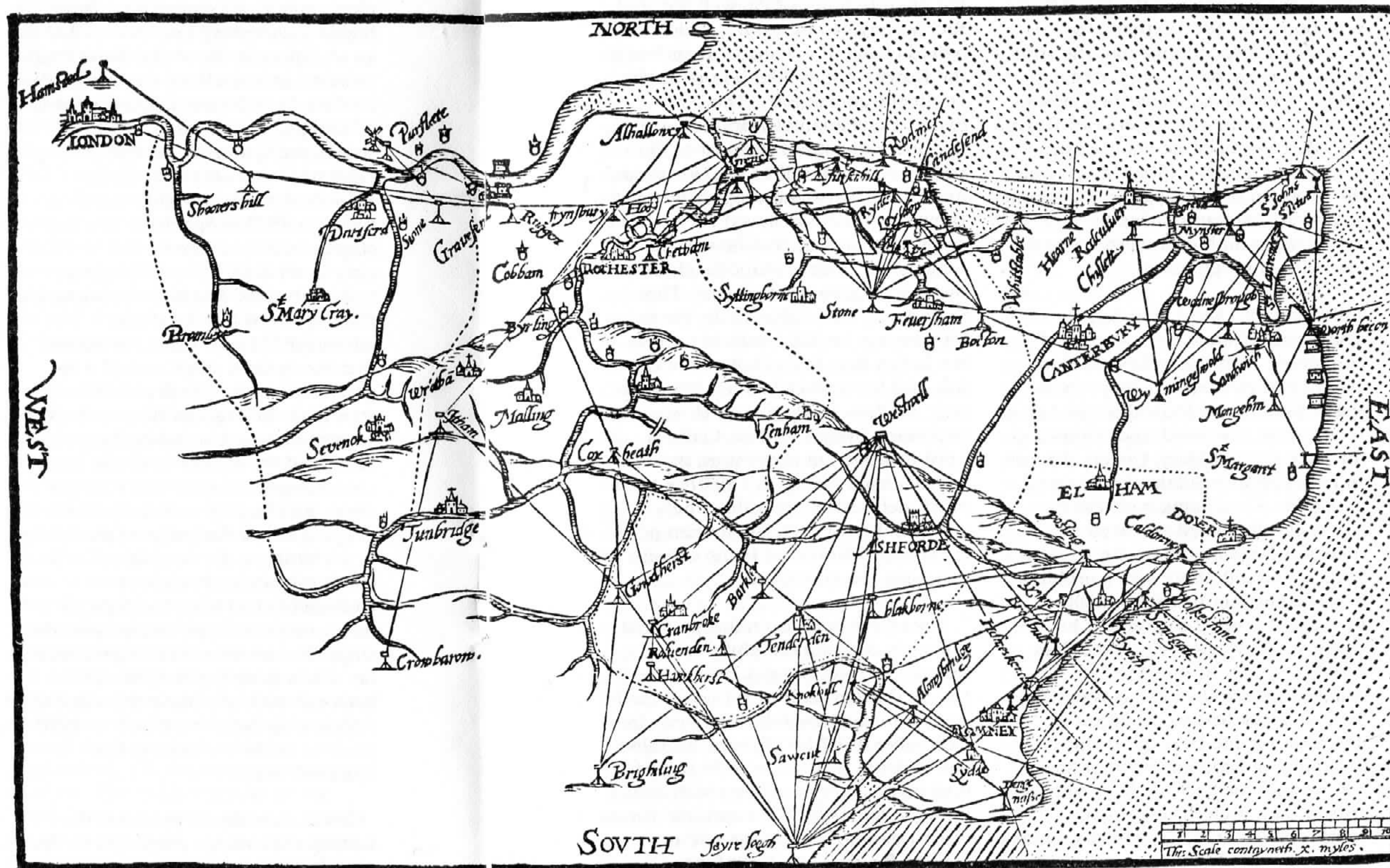
possess a marked superiority in all types of major artillery except for the 8 to 14 lb range, but many of the heavy cannon carried by the Armada were in fact siege guns mounted on land carriages and unsuitable for naval use. Moreover, a considerable proportion of the newly-made Spanish cannon and shot may have been defective. Furthermore, the appointment of Medina Sidonia to command the Armada has been re-assessed. He was not the aristocratic non-entity of legend, but an administrator of experience, who actually managed to get the fleet to sea. This in turn has led to new consideration of the wider plan. The duke of Parma may not have been going through the motions; his invasion force may have been more prepared than has been thought. Did the Armada, in fact, have a serious chance of success?

The Spanish Plans

The origins of the Enterprise of England can be traced to the early 1530s, when English Catholics first appealed to Charles V for aid against the schismatic Henry VIII. Intervention in England thereafter became an important issue in the making of Habsburg policy. There was, from this point on, both an 'interventionist' party, and a cautious one, who regarded an invasion, without evidence of overwhelming popular support, as a very risky enterprise. Not only might it lead to involvement in a prolonged English civil war, 'but even if this expedition succeeds, it will be difficult to hold the Island'.[14] The dilemma became more acute after 1558. If the direct Spanish experience of England during Philip's short reign gave further weight to the advocates of caution, the king himself felt a personal responsibility to English Catholics. English exiles (and to some extent the papacy) were now allied with the interventionists and invasion and deposition plans surfaced regularly. Yet the king was still much influenced by the arguments for caution. In 1571 he gave hesitant approval to the Ridolphi Plot; in 1574 a naval expedition was toyed with; but only at the end of the 1570s did the balance shift decisively towards intervention.

Underlying this shift was the identification of Elizabeth as his chief enemy. For this there were three main reasons. It was clear after 1577 that the English would not cease meddling in the rebellion of the Netherlands. Drake's circumnavigation voyage of 1577-80 had demonstrated dramatically the vulnerability of the empire in the Indies to piratical raids. The English had also taken up the protection of the Portuguese claimant Dom António. Despite the success of the occupation of Portugal in 1580-83, the Portuguese empire now became a further burden on imperial defence. Philip saw his choice as one between a long defensive struggle or a quick and decisive attack on Elizabeth; a major expedition 'to sever the root of the evil' might be cheaper in the long run than 'the inevitable damages of defensive wars'.[15]

In 1583 the marquis of Santa Cruz suggested that the fleet of 98 ships with which he had just captured the Azores could be used against England. Parma, however, advised waiting until the Netherlands had first been



Central to English coastal defence was the beacon system. This chart from the revised edition of William Lambarde's ***Perambulation of Kent*** *(1596) is the most detailed contemporary example to survive, and the only one to show the inland relay stations.*

reconquered. What precipitated the final decision was the open English intervention in the Netherlands and the dispatch of Drake to the West Indies in the summer of 1585. Most of the advisors Philip consulted during the winter of 1585-86 (including Medina Sidonia) agreed that some form of attack on England was both justified and preferable to a defensive war. Santa Cruz proposed landing an army of 55,000 men in either England or Ireland, but for this he needed a fleet of 510 ships. Parma continued to advise postponement at least until Flushing was captured, which would enable the fleet to use the Scheldt. He was, however, also prepared to consider a surprise invasion. His army would employ barges and coastal shipping dispersed along the Flemish coast and land in Kent between Dover and Margate. Then he could either advance on London directly, or avoid the problem of crossing the Thames at Southwark by transporting his men across the mouth of the estuary and marching through Essex.

By January 1587 Philip had assembled, albeit at the expense of commerce with the Indies, 90 ships and 12,000 men in various ports in Spain. Landings in Ireland or the Isle of Wight were discussed, and, following the execution of Mary, Queen of Scots, an expedition to Scotland was also a possibility. Combining with Parma, however, eliminated the need to transport large numbers of men from Spain — though there was a problem in co-ordinating the two. Initially Parma had wanted to conduct his attack secretly, after which the fleet could join him. In July 1587 he changed his mind and now wanted the fleet to attack first to provide a diversion for the landing. At the beginning of September Philip finally resolved the debate: the fleet and the army would undertake a single combined invasion, for which an attack on Ireland would act as a cover. The fleet would carry 16,000 soldiers (6,000 of whom were to be reinforcements for Parma), plus a siege train, mules, heavy equipment, munitions and supplies. It would go directly to the proposed landing place, and there 'assure the passage' of the 30,000 to 40,000 men that Parma would have waiting at the Flemish ports.[16]

In Philip's instructions the rendezvous and landing place was always described as 'el cabo de Margat'. It is doubtful that the cliffs of the North Foreland were intended, rather the open beaches of Pegwell Bay and Richborough to the south, which would enable the Armada to anchor in the Downs, and render a port on the continent unnecessary. The experienced admiral Juan Martínez de Recalde understood the goal of the voyage to be 'to sail to the Downs and from there assist and support those at Dunkirk'.[17] Philip believed Parma to be ready that autumn, and he wished Santa Cruz to leave immediately, lest the war drag on another year. This, Santa Cruz was unable to do, for the long voyage he had made to protect the Indies fleet from Drake between July and September had left him with only 31 ships ready to sail. How important Drake's raid on Cadíz in April had been in preventing the Armada from sailing in 1587 has been much debated. By revealing the vulnerability of even the Iberian ports it certainly reinforced Philip's desire to conclude the enterprise.

Santa Cruz was also unhappy about sailing in the autumn. Philip was prepared to run the risk, and wanted the 31 ships at least to set up a base in Ireland for use the following year. In December 1587 he changed his mind and ordered that the best 35 ships be sent immediately to Parma with 6,000 reinforcements. In the meantime Parma was to mount his surprise without waiting for the fleet. Both Santa Cruz and Parma considered this scheme impossible as the English and the Dutch were now on the alert and the 35 ships would be outnumbered, particularly as the Downs were the obvious place for the English to concentrate their own fleet. In January 1588 Philip agreed to wait until the whole fleet was ready and issued Santa Cruz with more precise instructions. He was not be be diverted by rumours of a new raid by Drake on Spain, although he could engage him in the Channel. At 'Cape Margate...which I believe is where the duke of Parma is aiming, although he does not name it' he should have sufficient strength to defeat the English if he encountered them. His tactical dispositions were left to his own judgment, but he was advised about the English use of artillery and fireships, and was permitted to call on Parma for reinforcements of men and shipping should he need them.[18]

On 30 January 1588 the ailing Santa Cruz died. Philip wasted no time in appointing Medina Sidonia, who had already been warned of the possibility, as his successor on 4 February. At the end of March he was provided with copies of both instructions (September and January) given to Santa Cruz, and two additions, a new set of secret orders and a sealed letter to be given to Parma. Both dealt with the possibility of failure at the Downs. Medina Sidonia was permitted to retire to the Solent and from there to co-ordinate further operations. Parma's orders were, in fact, terms for a compromise settlement: English evacuation of the Netherlands, toleration for Catholics, and financial compensation for Drake's raids. The Armada's presence in English waters, Philip hoped, should be sufficiently intimidatory. In the meantime, however, circumstances had changed. Parma was now far more dependent on the fleet. His effective strength for the invasion had been reduced to 18,000 men, and the reinforcements carried by the Armada were vital. Moreover, since the English were on the alert, a surprise attack was impossible and he could move only after the Armada had secured his safe passage. There was also the problem of Drake. If a diversionary attack on the Spanish coast was to be ignored, Medina Sidonia was still to be prepared for Drake to attack him from Plymouth on his way up the Channel. The duke was very uneasy about the absence of a secure port in which to reassemble in the event of storms. Philip insisted that he proceed directly to the Downs; thereafter he could shelter in the Thames. The Solent was to be used only if that was impossible.

For all their detail, these instructions leave a number of questions unexplained. At no point was a halt at Calais Roads discussed, and Philip specifically advised Medina Sidonia to avoid the French coast. Philip may have been clear about the rendezvous, but the limited communication between Medina Sidonia and Parma failed to clarify this crucial point or the implication in the January instructions that he could call on Parma for assistance. Parma had sent one officer in April; thereafter there was little from his end (though he may have sent ships that failed to reach the fleet) compared to the stream of messengers Medina Sidonia sent once he approached the Channel. Co-ordination was made even more difficult by the two stages of the Armada's voyage. It left Lisbon on 18 May, but it was then hit by very bad weather, and three weeks later (9 June) staggered into La Coruña. Reassembly, repairs and replenishment took another month; the Armada did not leave on its final voyage until 12 July.

At La Coruña, Medina Sidonia took the bold step of advising the king to call off the expedition while he could. He revealed that he had always had

doubts about the enterprise. So had Parma, who recommended that Philip make a quick settlement with Elizabeth. Yet if his chief commanders were under no illusions about the difficulties of their task, both the king and some of the leading captains of the Armada (Don Pedro de Valdés and Don Antonio de Leyva in particular) continued to emphasise the weakness of the English. Whether this was wishful thinking or delusion is not clear, but it raises the question, as Geoffrey Parker has suggested, whether Philip regarded even a defeat of the Armada in English waters as less of a failure than halting it at this stage. No less curious was the absence of clear political aims for the invasion. The sealed orders to Parma were for a compromise in the event of failure, but what were to be the consequences of victory? Understandably, Philip wished to avoid discussions of the English succession prior to the death or capture of Elizabeth. But what if Parma had to face a more extended English resistance? No serious attempt was made to organise an English Catholic rising beforehand. This may be attributed to a healthy doubt about the reliability of some of the exiles, but it also reveals a major weakness in the enterprise. Philip's main concerns were the strategic dilemmas facing his empire; the regaining of England to the Church was essentially a further benefit. The Armada, which might have appeared an army of Catholic liberation, approached England as a Spanish army of conquest.

The English Plans

In the English debates, defence of the realm played a much smaller role than is often thought, for the occupation of Portugal and Drake's circumnavigation voyage had inspired a particularly ambitious strategy of offensive war. Drake's success had led to a dangerous overconfidence and a widespread belief in Spanish weakness at sea, which accounted for much of the surprise caused by the strength of the Armada. The exile of Dom António and Drake's penetration of the East Indies created a new target for English maritime power: a Portuguese revolt that would threaten Philip in the Iberian peninsula and open the Portuguese empire to English commerce. This was more than opportunism. For Drake's patrons, the earl of Leicester and Sir Francis Walsingham, it provided an answer to the main argument against their policy of support for the Netherlands Revolt: the financial weakness of England in the face of an open war with Spain. Now military intervention in the Netherlands could be funded by naval expeditions to the Indies and the war would be self-financing.

This strategy was a central element in the English lurch into war between 1585 and 1588. Fears of the collapse of the United Provinces following the assassination of William of Orange led to open military intervention in 1585, but it was accompanied by Drake's West Indies voyage. This had originally been planned as one to the Moluccas, when Philip played into the hands of the English interventionists by his still unexplained seizure of foreign shipping in Spain in May 1585. The embargo provided a justification for letting Drake loose in the West Indies. The ambitions of the interventionists were not, however, realised. Leicester soon became bogged down in a war of sieges in the Netherlands that would demand limitless funding from England if it were to be successful. Drake recouped the costs of the West Indies voyage but did not provide the money needed for the Netherlands. Although what amounted to open war between Spain and England now existed, formal hostilities were never declared and Elizabeth's well-known lack of enthusiasm for military adventures re-surfaced. Not only did she refuse to

raise money or support from parliament, but she made it clear that she was also prepared to entertain proposals for a compromise settlement in the Netherlands. By early 1587 reports circulated of concentrations of Spanish shipping and Spanish claims 'that the next year without fail they will have it and with their pikes measure English cloth on London Bridge'.[19] This assault England might have to face alone, having alienated France and Scotland through the execution of Mary, Queen of Scots. The alternatives were either making a settlement or a spoiling attack on Spain by Drake who, since his return, had been planning an Anglo-Dutch expedition to restore Dom António to Portugal.

The attack on Cadíz was 'a brilliant piece of opportunism'; yet in a wider context the voyage was a further disappointment.[20] Drake had paid for himself again, but had not produced a surplus, nor, despite his claims, had he been able to remain off the Portuguese coast indefinitely. Moreover, singeing the king of Spain's beard so publicly made the threat of a campaign for revenge all the more credible. Drake's failure therefore only increased Elizabeth's desire for a settlement, which she made public that summer and autumn. In doing so, she was deliberately encouraged by both Philip and Parma (not that they believed one was possible), because it would provide a further deception for the Armada. Yet evidence of Spanish preparations was impossible to ignore. In October 1587 Elizabeth prohibited further commercial voyages until the emergency had passed, and undertook a serious review of coastal defences and the militia. A cautious mobilisation of shipping took place over the following months.

The disposition of the fleet was the subject of prolonged debate. If the Spaniards intended an amphibious invasion they would need a large amount of shipping. As Sir William Winter pointed out, Henry VIII's expedition to Leith in 1544 (in which he had taken part as a young man) had employed 260 ships to transport 11,000 men.[21] Despite the apparent openness of the English coastline, there were only a few landing places with anchorages of sufficient size: Milford Haven (considered too remote), Plymouth, Portland Bay, the Solent and 'the Downs, Margate and the Thames...in respect of the commodity of landing and the nearness of the prince of Parma in whose forces the king of Spain reposeth especial trust'.[22] In 1584 Lord Burghley had drafted a plan for dividing the fleet between the Downs, the Solent and the Isles of Scilly, with the intention of concentrating it once the Spanish target was known. But if there were advantages in keeping the fleet in its harbours as long as possible, there were also serious disadvantages: the winds that brought the invaders might trap it there, and English bases would provide no defence for Ireland or Scotland. The alternative was the paralysing of the Spanish fleet in its own waters by a repetition of Drake's 1587 raid. To this strategy there were also powerful counter-arguments: the Armada might escape, ships and crews would be worn down while at sea, the logistical difficulties were considerable, and Drake might take off on another plundering voyage.

Over the winter a squadron of nine ships under Sir Henry Palmer was stationed in the Downs against a surprise by Parma; pinnaces were sent to scout the Spanish coast; and Drake's Cadíz squadron was retained at Plymouth, while the possibility of a diversionary expedition to land Dom António in Portugal was explored. The main fleet was laid up in the Thames, to be concentrated at Portsmouth in March, and formal peace negotiations inaugurated at Bourbourg in Flanders.

The stalemate of the talks reopened the debate over a pre-emptive strike, and Drake urged that a fleet of 50 ships be sent to lie in wait for the Armada off Lisbon. In May the Queen agreed. Howard brought the greater part of the fleet to Plymouth, leaving only 40 ships in the Downs, now under Lord Henry Seymour. Seymour should have been accompanied by a Dutch squadron, requested by the Queen in January under the terms of the 1585 treaty of assistance but when it arrived in June it was considered too small to be of use. It joined instead the fleet of 90 ships that the admiralties of South Holland and Zealand had moblilised to conduct their own blockade of the Flemish coast.

The concentrated English fleet of nearly a hundred ships left for Lisbon on 30 May but was blown back to Plymouth on 6 June. Elizabeth then proposed that the fleet cruise in the middle of the Bay of Biscay, a scheme Howard and his council unanimously opposed. Two further attempts to reach the Spanish coast (on 19 and 23 June) were also blown back, the last on 9 and 10 July by the same wind with which the Armada finally left La Coruña. In the meantime Drake and Howard had received some news of the Armada's difficulties, which led them on their return in July to discount its arrival at all, and to plan for the attack on the silver convoy. The Armada's belated appearance thus forced them to fight an unexpected running battle in the Channel.

The circumstances surrounding the Channel battles account for both the English difficulties with food and ammunition, and their *ad hoc* tactics. The problems of supply arose from the fact that Plymouth was not a major naval station, but a small town in a 'narrow corner of the realm' with a difficult and unpopular harbour.[23] It derived its strategic importance from being the last major source of water for a western voyage. Supplies had to be transported by sea from London, and, since Elizabeth refused to stockpile them there, provisioning of the voyages to Spain took considerable time. Furthermore, ready money was in short supply. The navy cost a total of some £150,000 in 1588, £50,000 of which went on food. A series of loans brought in £130,000 between January and August; but, as Burghley's savage comment 'I marvel that where so many are dead on the seas the pay is not dead with them' makes clear, both resources and nerves were under great strain by mid-summer.[24]

Nevertheless, when the Armada was sighted, the fleet had supplies to last until 10 August. It was owing to their hasty departure that 'divers...ships had not leisure to receive the full of their proportions'.[25] As the battle moved nearer the Thames, it would work to Howard's advantage. The squadron most affected was Seymour's, which had retired to Dover to re-supply on 27 July, but had been interrupted by the Armada's approach. The main fleet's problems really arose after the return from the Forth. Supplies had been sent to Harwich, but a large part of the fleet was blown down to Margate and the Downs. A more difficult question is posed by ammunition, for accurate figures of ammunition in hand, expenditure during the battle, or Howard's success in replenishing (when did the 23 lasts of powder and shot sent from London on the 26th reach him?) are not available. If the estimates that only 30 rounds per gun were in hand at the departure from Plymouth are true, then the later accounts of heavy firing may be greatly exaggerated.

In the eyes of one contemporary Howard's *ad hoc* conduct of the battle was wholly justified:

For the occurents of warre bee so manifold and strange, that sometimes upon a moment the first resolutions and courses taken are to be altered as was well seene in our actions with the Spanyards in Anno 1588 at sea, where our first determinations and appointed orders were upon our joyning with the enemie quite altered and chaunged, and so chaunging dayly as occasions were offered.[26]

Typical of many sixteenth-century depictions of the battle, this Dutch painting, though accurate in its ship-types, is purely generalised. Neither a particular engagement nor specific ships can be identified.

Howard's only known tactical decision was the division of the fleet on 24 July, but minutes of his council of war between 19 July and 1 August do not exist and his scanty surviving letters to London do not reveal much. His initial concern over a landing between Plymouth and the Solent was soon overtaken by fears for his ammunition supply. He had every reason to welcome a fight in the Downs where he would be near his bases. In the meantime he hoped to pick off stragglers, and 'pluck their feathers by little and little'.[27] Contemporaries wondered whether he deliberately ordered his captains to avoid a boarding fight while in the Channel, but there is no evidence of a policy of trying to sink ships by cannon. The case of the *Maria Juan* and some earlier examples apart, the history of naval warfare after 1588 reveals how rarely this occurred and how important boarding remained. Firing

into the enemy's stern, thereby disabling the steering gear and raking the decks, and then offering the crippled ship the choice between boarding or surrender remained, until Trafalgar, the most successful tactic. The Elizabethans were fully aware of it, as the account of the capture of the Portuguese carrack *Madre de Dios* in 1592 reveals. It was the Armada's formation that made such attacks impossible; only stragglers could be isolated in this way.

The Fleets

Once the legends of the Armada battle are dismissed, the important similarities and differences between the fleets emerge. Both monarchies possessed the power to conscript men (between 8,000 and 9,000 mariners were mustered in each fleet) and ships. Their fleets in 1588 thus represented a full mobilisation, but at tremendous cost. It was clear that neither side could maintain it indefinitely; the paralysis of trade and commerce, and the drain on treasuries, created powerful pressures for a decision that summer. Yet both the 197 ships mobilised by Elizabeth and the 130 ships assembled for the Armada were greatly inflated figures. The great majority of the English ships were small coasting vessels; in the battle, 'we had been little holpen by them, otherwise than that they did make a show'.[28] Even the 34 ships of the Royal Navy were reduced in practice to 20 or so major warships, to which could be added a few large vessels, mainly owned by the Levant Company and other London merchants, and some private warships like the earl of Leicester's *Galleon Leicester*, a sister-ship to the *Revenge*. There were thus only about 50 effective English ships. The Armada mustered a similar number with a core of 23 'front-line' galleons and galleasses.[29] Fifty or so ships, roughly comparable in size, did most of the fighting on both sides.

The Spanish transports, the great urcas and hulks, had no counterparts in the English fleet. Much larger than any English merchantman, and in some cases even than the warships, their presence made the Armada a giant convoy, and accounted for many of its problems. Their slowness and clumsiness limited its speed, while their vulnerability made a close escort of shielding warships essential. There were not enough of the latter to enable an independently manoeuvring screen to be formed, The other major difference between the fleets lay in their organisation. The Armada was composed of ten great squadrons: six provincial (Portugal, Castile, Andalusia, Guipúzcoa, Biscay, Levant), one of 23 hulks, one of 22 pataches (pinnaces), and one each of four galleasses and galleys (the latter did not reach the Channel). These were not so much fighting formations, as administrative ones, and reflect the fact that there was no 'Spanish Fleet', but rather a collection of provincial fleets. Nor was there any central administration; the assembly of the Armada was an *ad hoc* process in which the key figure was the King himself. Only after 1588 was a central naval administration created.

The English, on the other hand, had possessed a central naval administration since the reign of Henry VIII; if anything their difficulties arose from over-centralisation. Here lay the crucial difference between the fleets: England possessed a precocious navy and an underdeveloped merchant fleet, Spain the opposite. The creation of the largest battle-fleet in northern Europe was one of the main achievements, or extravagances, of Henry VIII. What made it the more potent was the Elizabethan government's near-monopoly of the supply of heavy ordnance, both brass and cast-iron. By contrast the development of an Atlantic (as against a Mediterranean) navy had been a low priority in Spain before the 1580s. The warships that

escorted the Armada were either Portuguese or of new Spanish construction. Less successful was the provision of artillery, which the Spaniards knew was inferior, despite a crash programme of gun-founding in 1587-88. If they wished to fight a battle by boarding, it was less out of ignorance or conservatism than a desire to capitalise on their one clear advantage.

The comparisons in the structures of command are also revealing. Both fleets were commanded by conscientious grandees. Medina Sidonia's aversion to the sea is well known, but his experience of large-scale administration in the occupation of Portugal was vastly superior to Howard's, whose creation as Lord Admiral by Elizabeth was in the main a gesture to his family's tradition of naval service. Both admirals had their freedom of action circumscribed by royal instructions on the one hand and councils of war composed of mariners of experience on the other. If the admirals and their councils were allowed to make tactical decisions, neither had control of strategy or logistics. The rigidity of Philip's plan left Medina Sidonia with little room to manoeuvre. Howard's commission, on the other hand, was broader, and by concentrating most of the fleet in his hands, Elizabeth surrendered any real chance to control the battle.

Drake, whose own approach to command was highly autocratic, occupied an anomalous position on the English council of war. It would appear that Howard handled him with kid-gloves. Yet despite Drake's reputation, there was little difference on grounds of seamanship or experience between him and Hawkins on the one hand and Recalde and Miguel de Oquendo on the other. Nor were young noblemen similar to Antonio de Leyva or the prince of Ascoli absent from the English fleet. Howard gave the command of a number of major warships to his relations, Lord Thomas Howard and Lord Sheffield being the best known. The Spaniards, however, had the advantage of the most immediate experience of handling fleets of this size at Lepanto in 1571 or the Azores in 1582-83. Elizabethan fleets to date had been much smaller; only the few veterans of Henry VIII's campaigns had been involved in anything similar. The Portugal Voyage of 1589 was the first comparable Elizabethan expedition. From this experience came the Spanish discipline that so impressed English observers. The English, by contrast, were more freebooting in approach, and more casual in conduct. Much is revealed about Drake's method of command by the £100 he gave to the crew of the *Revenge* as a reward for the 'second day's fight' (and then claimed back from the crown). The English fought as individual ships or informal groups; the Spaniards fought as squadrons in a military order.

Consequences and conclusions

If there was a turning point in the Channel battle, it was less the engagement off Gravelines than Medina Sidonia's decision to halt at Calais. The Downs should have seen the decisive encounter; by stopping where he did Medina Sidonia threw everybody's calculations out. Thus, however inconclusive the earlier fighting, the Armada had failed to achieve its strategic purpose. This failure had a dramatic impact on England. What most impressed contemporaries was the hand of God displayed in the wind that drove the Armada into the North Sea: a dramatic example of the workings of divine providence. Seventeen years later the foiling of the Gunpowder Plot provided further evidence of God's intervention. Between them the Armada and the

Gunpowder Plot served as the leading examples of divine intervention in the contemporary world and thereby helped to establish the providential view of history in seventeenth-century English political culture.

The Armada victory also confirmed the apotheosis of Elizabeth the virgin queen (see back cover). Her virginity now symbolised the safety of the realm, and transcended the political difficulties it had caused during the first decades of the reign. Philip's emphasis on the Spanish rather than the Catholic aims of the Armada had provided Elizabeth with a propaganda victory of the first order. The patriotic and defensive nature of the battle undercut decisively the argument for a compromise settlement. The negotiations terminated at Bourbourg in the summer of 1588 were not resumed for another eleven years. Also transformed was the position of English Catholics. If the earl of Arundel had a mass said for the victory of the Armada (as was claimed), most Catholics found it impossible to support what appeared a foreign invasion. In this respect the Armada was a real turning point in Elizabethan foreign policy. The Protestant cause had been a central concern for Leicester, Walsingham and the interventionists. Now the war could be redefined as one of defence of the realm against an hegemonical tyrant.

The post-Armada shift of emphasis had a number of ramifications. The battle was the last triumph of the old sea dogs. Drake had the opportunity to carry out his cherished Portuguese project in 1589; his reputation never recovered from its failure. When he, Hawkins and Frobisher died in 1594-96 they were not replaced. The navy now became a Howard machine, for the battle had also served as the first stage in the revival of the house of Howard after the execution of the duke of Norfolk in 1572. The change in the character of naval command led to the wider controversy over gentlemen versus seamen officers that absorbed the Stuart navy. In this, the impression made by Spanish discipline in the Armada fight was of no small importance. The tensions between Howard and Drake had been carefully smoothed over in Elizabethan accounts; the issues that underlay them would not, however, go away.

In Spain the defeat initially brought recrimination. Although Medina Sidonia's report to the king emphasised the English fleet's seaworthiness and its artillery, other Spanish accounts attributed the defeat to the cowardice and incompetence of the duke himself, or the questionable conduct of Parma. This debate was, however, overtaken

Bronze half-saker and breech-loading ***esmeril*** *retrieved from the wreck of the galleass* ***Girona*** *off the Ulster coast. The great majority of the guns the Armada carried were light pieces like these.*

by Philip's decision to intervene in France in 1589. In doing so, the king tacitly accepted the existence of the defensive war he had tried to avoid. If future naval expeditions against England in 1596 and 1597 were dispersed by storms, an Atlantic fleet was created that held its own for the rest of the war. Nevetheless the defeat of the Armada had its effect, for although Spain had suffered naval disasters before, the image of the invincibility of Spanish arms created by Lepanto, the Azores and the Netherlands had been shattered. Moreover, the strategic dilemmas that underlay the planning of the Armada continued to face the Spanish empire throughout the first half of the seventeenth century. So long as the kings of Spain sought to maintain a presence in northern Europe, they would need to bring seapower to bear. Good relations with England were one answer; the alternative was a massive naval offensive. Spain's failure to resolve the dilemma was revealed 59 years later (in 1639) when, in the Downs, another fleet was destroyed by the Dutch. The defeat of the Armada may not have given England mastery of the seas, but it confirmed her naval pre-eminence in northern European waters

Notes

[1] ***State Papers Relating to the Defeat of the Spanish Armada, Anno 1588***, edited by **J.K. Laughton** (Navy Records Society, 1-2, 1894, 1898), 1, p. 351, Hawkins to Burghley (?), 31 July 1588.
[2] ***Armada Papers,*** 1, p. 288, Howard to Walsingham, 21 July 1588.
[3] ***Armada Papers,*** 1. p. 299, Howard to the earl of Sussex (?), 22 July 1588.
[4] ***Naval Tracts of Sir William Monson***, edited by **M. Oppenheim**, 3 (Navy Records Society, 43, 1912), p. 31.
[5] ***Armada Papers,*** 2, p. 259.
[6] ***History of England: The Reign of Elizabeth*** (Everyman edition, n.d.), 5, p. 456.
[7] ***Ibid,*** p. 458.
[8] **J.A. Froude,** ***English Seamen in the Sixteenth Century*** (1905), p. 309.
[9] ***Ibid,*** p. 255.
[10] ***La Armada Invencible,*** edited by **C. Fernández Duro (Madrid, 1884-85), 1, pp. 76-7.**
[11] **J.S. Corbett,** ***Drake and the Tudor Navy*** (1905), 2, pp. 131, 172.
[12] The remainder of the 2,431 guns carried by the Armada were too small to be of significance. Sixteenth-century 'cannon' fired projectiles between 30 and 50lbs in weight, culverins, 17 to 19lbs, and demi-culverins, minions and sakers between 3 and 9lbs.
[13] **P. Kemp,** ***The Escape of the Scharnhorst and Gneisenau*** (1975), p. 74.
[14] ***Discurso sobre la Jornada de Inglaterra,*** quoted in **G.P.B. Naish**, 'The Spanish Armada', ***Naval Miscellany IV*** (Navy Records Society, 92, 1952), pp. 4-5.
[15] ***Felipe II y el Marques de Santa Cruz en la Empresa de Inglaterra,*** edited by **E. Herrera Oría** (Madrid, 1946), p. 113, Instructions for Santa Cruz 4/14 September 1587.
[16] ***Ibid,*** p. 114.
[17] ***Armada Invencible,*** 2, p. 170. To Philip II, 1/11 July 1588.
[18] ***La Armada Invencible, 1587-1589,*** edited by **E. Herrera Oría** (Archivo Histórico Español, 2, 1929), pp. 130-31, Instructions for Santa Cruz, January 1588.
[19] British Library, Cottonian MS Galba C XI, fo. 309, Edmund Palmer to the earl of Leicester, 10 April 1587.
[20] **D.B. Quinn** and **A.N. Ryan,** ***England's Sea Empire, 1550-1642*** (1983), p. 100.
[21] ***Armada Papers,*** 1, p. 212-13, Winter to Walsingham, 20 June 1588.
[22] Brit. Lib, Harleian MS 137, fo. 110, Survey commission of 27 November 1587.
[23] ***Armada Papers,*** 1, p. 199, Howard to Walsingham, 13 June 1588.
[24] ***Ibid,*** 1, p. 284, to Walsingham, 19 July 1588.
[25] ***Ibid,*** 1, p. 294, Marmaduke Darell to Burghley, 22 July 1588.
[26] **R. Barrett,** ***The Theorie and Practike of Moderne Warres*** (1598), p. 75.
[27] ***Armada Papers,*** 1, p. 341, to Walsingham, 29 July 1588.
[28] ***Ibid***, 2, p. 13, Winter to Walsingham, 1 August 1588.
[29] **C. Martin,** ***Full Fathom Five: Wrecks of the Spanish Armada*** (1975), pp. 263-64.

Further Reading

Like this account of the Armada campaign, the bibliography must be selective. Only those works of direct relevance, or referred to in the text, are included. 1988 will see the publication of a number of further books and articles. Geoffrey Parker and Colin Martin, ***The Spanish Armada***, and the catalogue of the exhibition at the National Maritime Museum, edited by M.J. Rodríguez-Salgado will be of particular importance.

Many of the surviving documents relating to the Armada campaign can be found in print. The basic Spanish collection is ***La Armada Invencible***, edited by C. Fernández Duro (Madrid, 1884-85), much of which is translated in ***Calendar of State Papers, Spanish, Elizabeth,*** 4 ***1587-1603*** (1899, reprint 1971). The two main English collections are ***State Papers relating to the Defeat of the Spanish Armada, Anno 1588***, edited by J.K. Laughton and ***Papers relating to the Navy during the Spanish War, 1585-1587***, edited by J.S. Corbett (Navy Records Society, 1-2, 11; 1894, 1898, to be reprinted in 1987-88). These should be supplemented by ***La Armada Invencible, 1587-1589*** (Archivo Histórico Español, 2, 1929), and ***Felipe II y el Marques de Santa Cruz en La Empresa de Inglaterra*** (Madrid, 1946), both edited by E. Herrera Oría. Further documents are printed in 'Documents illustrating the Spanish Armada', G.P.B. Naish (ed), ***Naval Miscellany IV*** (Navy Records Society, xcii; 1952) and in ***Sir Francis Drake: A Pictorial Biography***, edited by H.P. Kraus (Amsterdam, 1970).

The classic accounts of the battle itself are those of J.S. Corbett, ***Drake and the Tudor Navy*** (1898, to be reprinted 1988), D.M. Waters, 'The Elizabethan Navy and the Armada Campaign', ***Mariner's Mirror,*** xxxv, 1949 (reprinted together with the documents published by Naish in D.M. Waters, ***The Elizabethan Navy and the Armada of Spain***, National Maritime Museum, Monograph Series, 17, 1975), G. Mattingly, ***The Defeat of the Spanish Armada*** (1959), and M. Lewis, ***The Spanish Armada*** (1960). D. Howarth, ***The Voyage of the Armada: the Spanish Story*** (1981) is a popular account based mainly on the documents in Fernández Duro. A.N. Ryan, '400 Years Ago: Reflections on the Armada Campaign', ***The Historian,*** 16, 1987, is a perceptive brief analysis.

For the military planning of the campaign, see L. van der Essen, ***Alexandre Farnèse, Prince de Parme,*** 5 (Brussels, 1937); and G. Parker 'If the Armada had Landed', ***Spain and the Netherlands, 1559-1659: Ten Studies*** (1979), and ***Philip II*** (1979). Also relevant are G. Parker and I.A.A. Thompson 'Lepanto (1571): the Costs of Victory' in ***Spain and the Netherlands,*** and Magdalena de Pazzis Pi Corrales, ***España y las Potencias Nordicas: 'La Otra Invencible', 1574*** (Madrid, 1983). The case for the duke of Medina Sidonia is made by the duque de Maura, ***El designio de Felipe II y el Episodio de la Armada Invencible*** (Madrid, 1957); I.A.A. Thompson, 'The Appointment of the duke of Medina Sidonia to the Command of the Spanish Armada', ***Historical Journal,*** 12, 1969; and P. O'M. Pierson, 'A Commander for the Armada', ***Mariner's Mirror,*** 55, 1969.

R.B. Wernham, ***Before the Armada:***

The Growth of English Foreign Policy 1485-1588 (1966) has not been superseded. The most recent accounts of Elizabethan maritime history are those of K.R. Andrews, ***Trade, Plunder and Settlement: Maritime Enterprise and the Genesis of the British Empire, 1480-1630*** (Cambridge, 1984) and D.B. Quinn and A.N. Ryan, ***England's Sea Empire, 1550-1642*** (1983). The older biographies of Hawkins, J.A. Williamson, ***Sir John Hawkins: The Times and the Man*** (1929), and ***Hawkins of Plymouth*** (1949), should be supplemented by K.R. Andrews' stimulating study of Drake, ***Drake's Voyages*** (1967), and R.W. Kenny, ***Elizabeth's Admiral: The Political Career of Charles Howard, Earl of Nottingham, 1536-1624*** (Baltimore, 1970). M. Oppenheim, ***A History of the Administration of the Royal Navy, 1509-1660*** (1896 to be reprinted in 1988) needs revision, in the meantime see the important series of articles by T. Glasgow on the the mid-Tudor navy in ***Mariner's Mirror,*** 53-56, 1967-1970, and R. Pollitt, 'Bureaucracy and the Armada: The Administrator's Battle', ***Mariner's Mirror,*** 60, 1974.

The gunnery debate can be followed in the series of eight articles, 'Armada Guns' published by Michael Lewis in ***Mariner's Mirror,*** 28-29, 1942-43, and reprinted as ***Armada Guns*** (1961). This should by supplemented by I.A.A. Thompson, 'Spanish Armada Guns', ***Mariner's Mirror,*** 61, 1975, and ***War and Government in Habsburg Spain, 1560-1620*** (1976), and on the subject of sixteenth-century naval gunnery as a whole, by J.F. Guilmartin, ***Gunpowder and Galleys: Changing Technology and Mediterranean Warfare at Sea in the Sixteenth Century*** (Cambridge, 1974). For the tactics used in the capture of the *Madre de Dios,* see E.W. Bovill, 'The ***Madre de Dios***', ***Mariner's Mirror,*** 54, 1968. Further technical aspects of the ships are discussed in T. Glasgow, 'The Shape of the Ships that Defeated the Spanish Armada', ***Mariner's Mirror,*** 50, 1964, and R.J. Lander 'Assessment of the Numbers, Sizes and Types of English and Spanish Ships mobilized for the Armada', ***Mariner's Mirror,*** 63, 1977. Knowledge of the Spanish ships has expanded greatly thanks to the work of marine archaeologists, see in particular, C. Martin, ***Full Fathom Five: Wrecks of the Spanish Armada*** (1975), and the catalogue for the exhibition ***Trésors de L'Armada,*** edited by L.N.W. Flanagan and R. Sténuit (Brussels, 1985).

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