



# Introduction

I was lucky to be so early in my studies of the Second World War. Finding participants was not difficult: the eyewitnesses and the men who had done the fighting were mostly still young. The men who had commanded the battles and made the decisions that influenced them were no longer young. My great good fortune was in being able to talk to such senior figures as General Adolf Galland, the Luftwaffe fighter chief, to Major-General Sir Francis de Guingand, the chief of staff to Field Marshal Montgomery, and to General Walther Nehring, who was chief of staff to General Rommel. (General Nehring was kind enough to write an Introduction for my book *Blitzkrieg*.) I also met with Albert Speer, Hitler's Minister of Armaments, a remarkable, and usefully frank, source of information about top-level decisions.

When the first edition of this book was ready to go to the printers I sat down with Tony Colwell and Steve Cox, editors who had supported and advised me through the years of writing it. It was the biggest and most demanding work I had ever undertaken and I knew that many of the truths I had uncovered would not bring universal joy. Tony and Steve had been tough critics. It was because they tested and challenged my theories and conclusions that I am now able to look with confidence at this reprinted version which remains as originally written.

It is a national characteristic beloved of the British to see themselves as a small cultured island race of peaceful intentions, only roused when faced with bullies, and with a God-given mission to disarm cheats. Rather than subjugating and exploiting poorer people overseas, they prefer the image of emancipating them. English school history books invite us to rally with Henry V to defeat the overwhelming French army at Agincourt, or to join Drake in a leisurely game of bowls before he boards his ship to rout the mighty Armada and thwart its malevolent Roman Catholic king. The British also cherish their heroes when they are losers. The charge of the Light Brigade is seen as an honourable sacrifice rather than a crushing defeat for brave soldiers at the hands of their incompetent commanders. Disdaining technology, Captain Scott arrived second at the South Pole and perished miserably. Such legendary exploits were ingrained in the collective British mind when in 1939, indigent and unprepared, the country went to war and soon was hailing the chaotic Dunkirk evacuation as a triumph.

Delusions are usually rooted in history and all the harder to get rid of when they are institutionalized and seldom subjected to review. But delusions from the past do not beset the British mind alone. The Germans, the Russians, the Japanese and the Americans all have their myths and try to live up to them, often with tragic consequences. Yet Japan and Germany, with educational systems superior to most others in the world, and a generally high regard for science and engineering design, lost the war. Defeat always brings a cold shock of reality, and here was defeat with cold and hunger and a well-clothed and well-fed occupying army as a daily reminder that you must do better. The conquerors sat down and wrote their memoirs and bathed in the warm and rosy glow that only self-satisfaction provides.

Half-finished wartime projects, such as the United Nations, fluid and unsatisfactory frontiers and enforced allegiances suddenly froze as the war ended with the explosion of two atomic bombs. The ever-present threat of widespread nuclear destruction sent the

great powers into a sort of hibernation that we called the Cold War. The division of the world into two camps was decided more by the building of walls, secret police and prison camps than by ideology. Expensively educated men and women betrayed their countrymen and, in the name of freedom, gave Stalin an atomic bomb and any other secrets they could lay their hands on. Only after the ice cracked half a century later could the world resume its difficult history.

But not everyone was in hibernation. With the former leaders of Germany, Italy and Japan disposed of as criminals, more criminal leaders came to power in countries far and wide. The Cold War that seemed to hold Europe's violence in suspense actually exported it to places out of Western sight. The existence of Stalin's prison camps was denied by those who needed Lenin and Marx as heroes. The massacre of Communists in Indonesia raised fewer headlines than Pol Pot's year zero in Cambodia, but they were out on the periphery. Newspapers and television did little to counteract the artful management of news at which crooks and tyrants have become adept. Orthodontics and the hair-dryer have become vital to the achievement of political power.

The postwar world saw real threats to the democratic Western ideals for which so many had died. Is the European Community – so rigorously opposed to letting newsmen or the public see its working and decision-making – about to become that faceless bureaucratic machine that Hitler started to build? Is the Pacific already Japan's co-prosperity sphere? Hasn't the Muslim world already taken control of a major part of the world's oil resources, and with the untold and unceasing wealth it brings created something we haven't seen since the Middle Ages – a confident union of State and Religion?

Britain's long tradition of greatly overestimating its own strength and skills leads it to underestimate foreign powers. Our Victorian heyday still dominates our national imagination and our island geography has often enabled us to avoid the consequences of grave miscalculations by our leaders. Such good fortune cannot

continue indefinitely, and perhaps a more realistic look at recent history can point a way to the future that is not just 'muddling through'.

In Germany in 1923 runaway inflation produced the chaos in which the Nazis flourished. Today the United States is very close to the position where even the total revenue from income tax will not pay the *interest* on its National Debt.<sup>1</sup> While the Japanese enjoy one of the world's highest saving rates, Americans are notoriously reluctant to put money into the bank. Furthermore Japan, with a population less than half that of the USA, employs 70,000 more scientists and engineers, uses seven times more industrial robots, and spends over 50 per cent more per capita on non-military research and development.<sup>2</sup>

Hans Schmitt, who grew up in Nazi Germany, returned to his homeland as an officer of the American army and become professor of history at the University of Virginia, wrote in his memoirs: 'Germany had taught me that an uncritical view of the national past generated an equally subservient acceptance of the present.'<sup>3</sup> It is difficult to understand what happened in the Second World War without taking into account the assumptions and ambitions of its protagonists, and the background from which they emerge. So in each part of this book I shall take the narrative far enough back in time to deal with some of the misconceptions that cloud both our preferred version of the war, and our present-day view of a world that always seems to misunderstand us.

One good reason for looking again at the Second World War is to remind ourselves how badly the world's leaders performed and how bravely they were supported by their suffering populations. Half a century has passed, and the time has come to sweep away the myths and reveal the no less inspiring gleam of that complex and frightening time in which evil was in the ascendant, goodness diffident, and the British – impetuous, foolish and brave beyond measure – the world's only hope.

# *Blood, Tears and Folly*



**PART ONE**

**The Battle of the Atlantic**





## BRITANNIA RULES THE WAVES

*For the bread that you eat and the biscuits you nibble,  
The sweets that you suck and the joints that you carve,  
They are brought to you daily by all us Big Steamers  
And if any one hinders our coming you'll starve!*

Rudyard Kipling, 'Big Steamers'

It is not in human nature to enshrine a poor view of our own performance, to court unnecessary trouble or to wish for poverty. Myths are therefore created to bolster our confidence and well-being in a hostile world. They also conceal impending danger. Having temporized in the face of the aggressions of the European dictators, Britain went to war in 1939 without recognizing its declining status and pretending that, with the Empire still intact, the price of freedom would not be bankruptcy.

In 1939 the British saw themselves as a seafaring nation and a great maritime power, but the two do not always go hand in hand. In order to understand the Royal Navy's difficult role in the Atlantic in the Second World War, it is necessary to return to the past and separate reality from a tangled skein of myth. Later in the book similar brief excursions will give historical perspective on the performance of the army and the air force, both in Britain and in the other main wartime powers.

After the Renaissance it was Portuguese and Spanish sailors who led the great explorations over the far horizons, while the English concentrated upon defending the coastline that had insulated them from the rest of Europe for centuries. By the middle of the sixteenth century Spain and Portugal had established outposts in America, Asia and Africa, and their ships carried warriors, administrators and

freight around the globe in 2,000-ton ships made in India from teak and in Cuba from Brazilian hardwoods. But when England's shores were threatened, small and less mighty vessels made from English oak and imported timber, sailed by skilful, intrepid and often lawless Englishmen, came out to fight. Using fireships, and helped by storms and by the hunger and sickness on the Spanish vessels, Francis Drake and his men decimated the mighty Armada.

Such dazzling victories have prevented a proper appreciation of the maritime achievements of our rivals. While English privateers were receiving royal commendations for preying upon the Spanish galleons from the New World, the Dutch and the Portuguese were fighting on the high seas for rule of the places from which the gold, spices and other riches came.

The Dutch were an authentic seafaring race. They had always dominated the North Sea herring fishing, right on England's doorstep, and traded in the Baltic. Their merchant ships carried cargoes for the whole world. By the early 1600s one estimate said that of Europe's 25,000 seagoing ships at least 14,000 were Dutch. The English sailor Sir Walter Raleigh noted that a Dutch ship of 200 tons could carry freight more cheaply than an English ship 'by reason he hath but nine or ten mariners and we nearer thirty'.

In 1688 the Dutch King William of Orange was invited to take the English throne. Dutch power at sea was subordinated to English admirals. At this time England had 100 ships of the line, the Dutch 66 and France 120. England's maritime struggles with the Netherlands ended, and France – England's greatest rival and potential enemy – was outnumbered at sea. The French were not a seafaring race, they were a land power. Their overseas colonies and trade were not vital to France's existence. Neither were exports vital to England, where until the 1780s the economy depended almost entirely upon agriculture, with exports bringing only about 10 per cent of national income.

The Dutch king's ascent to the English throne was the sort of luck that foreigners saw as cunning. It came at exactly the right moment for England. From this time onwards the French seldom

deployed more than half of the Royal Navy's first-line strength. Soon the industrial revolution was producing wealth enough for Britain to do whatever it pleased. But that wealth depended upon the sea lanes, and the Royal Navy had to change from a strategy of harassing and plundering to escorting and protecting merchant shipping. It was not easy to adapt to the shepherd's role. The Royal Navy was by tradition wolflike; its speciality had always been making sudden raids upon the unprepared. 'It could be fairly said,' wrote the naval historian Jacques Mordal, 'that with the exception of Trafalgar, the greatest successes of the British navy were against ships at their moorings.'<sup>1</sup> Damme, Sluys, La Hougue, the Nile, Copenhagen, Navarino and Vigo Bay were all such encounters. So were the actions against the French navy in 1940.

It was Napoleon's defeat at Waterloo that gave the Royal Navy mastery of the seas. France, Holland and Spain, weakened by years of war, conceded primacy to the Royal Navy. Britain became the first world power in history as the machines of the industrial revolution processed raw materials from distant parts of the world and sent them back as manufactured goods. Machinery and cheap cotton goods were the source of great profits; so were shipping, banking, insurance, investment and all the commercial services that followed Britain's naval dominance. The British invested abroad while Britain's own industrial base became old, underfinanced, neglected and badly managed, so that by the mid-nineteenth century the quality of more and more British exports was overtaken by her rivals. Manufacturing shrank, and well before the end of the century service industries became Britain's most important source of income. The progeny of the invincible iron masters dwindled into investment bankers and insurance men.

To cement the nineteenth century's Pax Britannica Britain handed to France and the Netherlands possessions in the Caribbean, removed protective tariffs and preached a policy of free trade, even in the face of prohibitive tariffs against British goods and produce. The Royal Navy fought pirates and slave traders, and most of the world's great powers were content to allow Britain

to become the international policeman, especially in a century in which restless civil populations repeatedly threatened revolution against the existing order at home.

The British fleet showed the flag to the peoples of the Empire in five continents and was a symbol of peace and stability. Well-behaved children of the middle classes and workers too were regularly dressed in sailor costumes like those the British ratings wore.<sup>2</sup> But appearances were deceptive. The Royal Navy was unprepared for battle against a modern enemy.

As the nineteenth century ended the importance of the Royal Navy was diminishing. Population growth, and efficient railway networks, meant that armies were becoming more important than navies. The new-found strength that industrialization, much of it financed by Britain, had given to other nations ended their willingness to let Britain play policeman. Although in 1883 more than half of the world's battleships belonged to the Royal Navy, by 1897 only two of every five were British<sup>3</sup> and countries such as Argentina, Chile, Japan and the United States had navies which challenged the Royal Navy's local strength.

Since the time of Nelson the cost of the Royal Navy had increased to a point where it tested Britain's resources. Nelson's ships were cheap to build and simple to repair. Needing no fuel, sailing ships had virtually unlimited range, and by buying food locally cruises could be extended for months and even years. But the coming of steam engines, screw propellers and turbines, together with the improving technology of guns, meant supplying overseas bases with coal, ammunition and all the tools and spares needed for emergencies. Full repairs and maintenance could only be done in well-equipped shipyards. A more pressing problem was the steeply increasing cost of the more complex armoured warships. In 1895 the battleship *HMS Majestic* cost a million pounds sterling but *HMS King George* in 1910 cost almost double that.

The time had come for Britain's world role, its methods and its ships, to be totally revised. An alliance with Japan, and the recognition that cultural ties made war with the USA unthinkable,

released ships from the Pacific stations. An alliance with France released ships from the Mediterranean so that the Royal Navy could concentrate virtually its entire sea-power in home waters facing the Germans. Germany had been identified as the most potent threat, and anxiety produced a climate in which talk of war was in the air.

### **The German navy**

Germany dominated Europe. Prussia, where in 1870 nearly 45 per cent of the population was under twenty years of age, dominated Germany. Otto von Bismarck (nominally chancellor but virtually dictator) had remained good friends with Russia while winning for his sovereign quick military victories over Denmark and Austria-Hungary. Then to the surprise of all the world he inflicted a terrible defeat upon France. Reparations – money the French had to pay for losing the war of 1870 – made Germany rich, universal conscription made her armies large, and Krupp's incomparable guns made them mighty. After the victory over the French, the German king became an emperor and, to ensure France's total humiliation, he was crowned in the Hall of Mirrors in Versailles. Bismarck now had everything he wanted. He looked for stability and was ready to concede the seas to Britain.

But in 1888 a vain and excitable young emperor inherited the German throne. Wilhelm II of Hohenzollern had very different ideas. 'There is only one master in the country, and I am he.' He sacked Bismarck, favoured friendship with Austria-Hungary instead of Russia, gave artillery and encouragement to the Boers who were fighting the British army in southern Africa (a conflict that has been called Britain's Vietnam), spoke of a sinister-sounding *Weltpolitik* and, in an atmosphere of vociferous anti-British feeling, began to build his *Kaiserliche Marine*.

Despite Britain's small population<sup>4</sup> and declining economic performance, the strategic use of sea-power had given the British the most extensive empire the world had ever seen. Yet although a large proportion of the world lived under the union flag, Britain had nothing like the wealth and military power to hold on to the vast

areas coloured red on the maps. Tiny garrisons and a few administrators convinced millions of natives to abide by the rules of a faraway monarch. The army's strategic value was in guarding the naval bases where the Royal Navy's world-ranging ships were victualled, coaled or oiled. Luckily for Britain, its military power was not seriously challenged for many years. Only when the Boers in South Africa erupted was Britain's tenuous grip on its territories clearly demonstrated.

The German army on the other hand had shown its might and skills again and again, and having seen their army march into Paris in 1870 the German navy itched to test itself against the British. With almost unlimited funds at his disposal Rear-Admiral Alfred Tirpitz was to build for the Kaiser the sort of fleet that would be needed to challenge the Royal Navy. In anticipation of this moment, German naval officers more and more frequently held up their glasses and toasted 'Der Tag!' – the day of reckoning.

Admiral Tirpitz claimed to be unaware that his preparations were aimed at war with Britain. 'Politics are your affair,' he told the Foreign Ministry, 'I build ships.'<sup>5</sup> And as if to prove his point he sent his daughters to study at the Cheltenham Ladies' College in England.

The British were alarmed by the prospect of an enlarged German navy. Still more worrying for them was the rise in German trade, which went from £365 million in 1894 to £610 million in 1904, with a consequent increase in German merchant ship tonnage of 234 per cent. In fact Britain's foreign markets were suffering more from American exporters than from German ones but – still smarting from Germany's pro-Boer stance – the British resented the Germans, while Anglo-American relations on personal and diplomatic levels remained very good.

In December 1904 Britain's new first sea lord, Admiral Fisher, started planning his new all-big-gun battleships. Although naval architects in Italy, America and Japan had all predicted the coming of a super-warship, this one was so revolutionary in design that it gave its name to a new category of battleship.

The big hull had spent only one hundred days on the stocks when King Edward VII launched HMS *Dreadnought* on a chilly

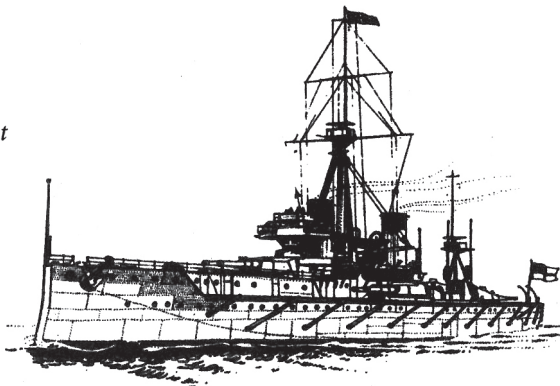
February day in 1906. He wore the full dress uniform of an admiral of the fleet, which Britain's monarchs favoured for such ceremonies, when he swung the bottle of Australian wine against her hull. The bottle bounced and failed to break and he needed a second attempt before the wine flowed, and the great warship went creaking and groaning down the slipway into the water.

She was completed in record time: one year and a day. The use of the rotary turbine, instead of big upright pistons, made her profile more compact and thus better armoured. According to one admiral the bowels of previous battleships were uncomfortable:

When steaming at full speed in a man of war fitted with reciprocating engines, the engine room was always a glorified snipe marsh; water lay on the floor plates and was splashed about everywhere; the officers often were clad in oilskins to avoid being wetted to the skin. The water was necessary to keep the bearings cool. Further the noise was deafening; so much so that telephones were useless and even voice pipes of doubtful value ... In the *Dreadnought*, when steaming at full speed, it was only possible to tell that the engines were working, and not stopped, by looking at certain gauges. The whole engine room was as clean and dry as if the ship was lying at anchor, and not the faintest hum could be heard.<sup>6</sup>

FIGURE 1

HMS *Dreadnought*





Gunnery was also changed. Ships armed with many short-range guns – exemplified by the 100-gun *Victory* – were no match for ships which could fire salvos of very heavy shells at long range. The big gun had proved itself. For the Americans sinking the Spanish ships at Santiago and Manila Bay, for the Japanese destroying the Russian fleet at Tsushima, the big gun had proved the decisive weapon. ‘Dreadnoughts’ – as all the new type of capital ships were now to be called – would have speed enough to force or decline a naval action. Furthermore the long-range gun would offset the threat of the torpedo; a sophisticated weapon that, wielded by dashing little vessels, threatened the future of the expensive warships.

The introduction of the Dreadnought design was a denial of Britain’s decline. It signalled that Britain had started to build its navy afresh, and that its sea-power could be equalled only by those who kept pace with the building programme. Almost overnight Admiral Tirpitz found his 15-battleship fleet completely outclassed. The Kaiser responded at once. SMS *Nassau*, the first of Germany’s Dreadnoughts, was ready for action by March 1908. On paper the German ships seemed inferior in design to the Dreadnoughts of the Royal Navy – for instance *Nassau* employed reciprocating engines and had 11-inch guns compared with HMS *Dreadnought*’s 12-inch ones. But the *Nassau*’s guns had a high muzzle-velocity, which gave a flat trajectory for better aim and penetration. The ship’s interior was very cramped, but top-quality steel was used as armour. Her small ‘honeycomb-cell’ watertight compartments made her extremely difficult to sink; a feature of most German warships.

The big new German ships provided the Berlin planners with an additional problem. The 61-mile-long Kiel Canal was essential to German naval strategy, for it eliminated a long and hazardous journey around Denmark, and the need for a separate Baltic Fleet to face the threat of Russian sea-power. But the Kiel locks had been built for smaller warships; there was no way that the Germans could squeeze a ship the size of a Dreadnought through the Canal.

### **Churchill – first lord of the Admiralty**

In 1911, when the 36-year-old Winston Churchill was appointed first lord of the Admiralty (the minister responsible for the Royal Navy), he was appalled to find his Whitehall offices deserted, and ordered that there be always officers on duty. On the wall behind his desk he put a case, with folding doors which opened to reveal a map on which the positions of the German fleet were constantly updated. Churchill started each day with a study of that map.

Churchill revolutionized the navy. His principal adviser was the controversial Sir John Arbuthnot Fisher, who predicted with astounding accuracy that war against Germany would begin on 21 October 1914 (when widening of the Kiel Canal for the new German battleships was due to be completed). The Royal Navy did not welcome Churchill's ideas. When he wanted to create a naval war staff, they told him they did not want a special class of officer professing to be more brainy than the rest. One naval historian summed up the attitude of the admirals: 'cleverness was middle class or Bohemian, and engines were for the lower orders.'<sup>7</sup>

Churchill forced his reforms upon the navy. He created the Royal Naval Air Service. Even more importantly, he changed the navy's filthy coal-burning ships, with their time-consuming bunkering procedures, to the quick convenience of oil-burning vessels with 40 per cent more fuel endurance. As industry in Britain was built upon coal but had no access to oil, this entailed creating an oil company – British Petroleum – and extensive storage facilities for the imported oil. He ordered five 25-knot oil-burning battleships – *Queen Elizabeth*, *Warspite*, *Barham*, *Valiant* and *Malaya* – and equipped them with the world's first 15-inch guns. Normally a prototype for such a gun would have been built and tested, but rather than waste a year or more, Churchill put the guns straight into production so that the ships could be ready as soon as possible.

Britain's need for naval alliances had dragged her into making an agreement with France that should war come Britain would send an army to help defend her. This was a dramatic change in Britain's centuries-old policy of staying out of mainland Europe.

Cautious voices pointed out that no matter what such an expeditionary force might achieve in France, Britain remained vulnerable to foreign fleets. It was a small offshore island dependent upon imported food, seaborne trade and now oil from faraway countries instead of home-produced coal. The extensive British Empire was still largely controlled by bureaucrats in London. Defeated at sea, Britain would be severed from its Empire, impoverished and starved into submission.

### **The First World War**

To what extent Emperor Kaiser Wilhelm was set upon war with England in 1914 is still difficult to assess. If there was one man who, by every sort of lie, deceit and stupidity, deliberately pushed the world into this tragic war, that man was Count Leopold 'Poldi' Berchtold, Austrian foreign minister. But the German Kaiser stood firmly behind him and showed no reluctance to start fighting.

Bringing recollections of Fisher's warning, elements of the Royal Navy were at Kiel, celebrating the opening of the newly widened Canal, when news came of the assassination at Sarajevo. A few weeks later Europe was at war. It was also significant that Britain's widely distributed warships were told 'Commence hostilities against Germany' by means of the new device of wireless.

Germany had 13 Dreadnoughts (with ten more being built); Britain had 24 (with 13 more under construction, five of which were of the new improved *Queen Elizabeth* class). However, this superiority has to be seen against Britain's worldwide commitments and Germany's more limited ones.

Britain's Admiral Fisher had gloated that the Germans would never be able to match the Royal Navy because of the untold millions it would cost to widen the Kiel Canal and deepen all the German harbours and approaches. The Germans had willingly completed this mammoth task. The British on the other hand had refused to build new docks and so could not build a ship with a beam greater than 90 feet. Sir Eustace Tennyson-d'Eyncourt (Britain's director of naval construction) was later to say that with

wider beam, 'designs on the same length and draught could have embodied more fighting qualities, such as armour, armament, greater stability in case of damage, and improved underwater protection.'

The Germans built docks to suit the ships, rather than ships to fit the docks. With greater beam, the German ships also had thicker armour. Furthermore the German decision to build a short-range navy meant that less space was required for fuel and crews. More watertight compartments could be provided, which made German warships difficult to sink. This could not be said of ships of the Royal Navy.

The Royal Navy's planners would not listen to the specialists and experts and continuously rejected innovations for the big ships. While British optical instrument companies were building precise range-finders (with up to 30 feet between lenses) for foreign customers, the Admiralty was content with 9 feet separation. When Parsons, the company founded by the inventor and manufacturer of turbine engines, suggested changing over to the small-tube boilers that worked so well in German ships, the Admiralty turned them down. The triple gun-turrets that had proved excellent on Russian and Italian ships were resisted until the 1920s.

The German navy welcomed innovation. After a serious fire in the *Seydlitz* during the Dogger Bank engagement of 1915 they designed anti-flash doors so that flash from a shell hitting a turret could not ignite the magazine. On Royal Navy ships cordite charges in the lift between magazine and turret were left exposed, as was the cordite handling room at the bottom of the lift, and the magazine remained open during action. This weakness was aggravated by the way that British warships were vulnerable to 'plunging fire' that brought shells down upon the decks and turrets. Typically turrets would have 9-inch-thick side armour and 3-inch-thick tops. This deficiency would continue to plague the Royal Navy in the Second World War.

Churchill's gamble with his 15-inch guns paid off, but the smaller German guns had the advantage of high muzzle-velocity.

The Royal Navy knew that its armour-piercing shells broke up on oblique impact with armour but had not solved this problem by the time the First World War began. Only eight Royal Navy ships had director firing (as against gunners choosing and aiming at their own targets), while it was standard in the German navy. The superior light-transmission of German optics gave them better range-finders, and German mines and torpedoes were more sophisticated and more reliable. The Royal Navy neglected these weapons, regarding them as a last resort for inferior navies. It was a view open to drastic revision when HMS *Audacious*, a new Dreadnought, sank after collision with a single German mine soon after hostilities began.

As warfare became more dependent upon technology German superiority in chemistry, metallurgy and engineering became more apparent. The German educational system was ahead of Britain. In 1863 England and Wales had 11,000 pupils in secondary education: Prussia with a smaller population had 63,000. And Prussia provided not only *Gymnasien* for the study of 'humanities' but *Realschulen* to provide equally good secondary education in science and 'modern studies'.<sup>8</sup> The French scholar and historian Joseph Ernest Renan provided an epilogue to the Franco-Prussian War by saying it was a victory of the German schoolmaster. The education of both officers and ratings, coupled to the strong German predilection for detailed planning and testing, produced a formidable navy. Its signalling techniques and night-fighting equipment were superior to those of the British and this superiority was to continue throughout the war. Churchill warned in 1914 that it would be highly dangerous to consider that British ships were superior or even equal as fighting machines to those of Germany.

For many years the American Rear-Admiral A. T. Mahan's book *The Influence of Sea Power upon History* had specified the way in which all sea wars must be fought: by big ships battling to contest sea lanes. But the British would not play this game. Surprising many theorists, the Royal Navy of 1914 refused battle and instead set up a blockade of German ports. The geographical position of

the British Isles, and a plentiful supply of ships, persuaded the Admiralty to create barriers across the open water by means of mines and patrols. The Germans responded by a less ambitious blockade of Britain. German warships prowled the sea routes to sink the merchant ships bringing supplies to the British Isles.

Given this strategy, German engineering and the development of the torpedo, it was inevitable that the German navy became interested in submarines. Although they were the last of the major powers to adopt that weapon, the Germans had watched with interest the designs and experiments of other nations. The first German-built submarines were supplied to overseas customers. The *Forel*, built and tested at Kiel, was supplied to Russia and went by railway to Vladivostok.

The Germans rejected ideas about using submarines for coastal defence, or as escorts for their fleet. They wanted an offensive weapon. This meant longer-range, more seaworthy vessels. Because they considered the petrol engines used by the Royal Navy as too hazardous, their early U-boats used a kerosene (liquid paraffin) engine, but it was the development of the diesel engine that made the submarine a practical proposition. The first production diesel was made in the M.A.N. factory in Augsburg in 1897, and a much improved version was tested in a U-boat in Krupp's Germania Works in Kiel in 1913. At that time the U-boat was still a primitive device. During the First World War the submarine tracked, attacked and escaped on the surface, its low silhouette making it difficult to spot. It could only hide briefly below the surface but (in a world without asdic, sonar or radar) hiding was enough. The British had more or less ignored the dangers of commerce raiding by submarines because the Hague Convention denied any warship the right to sink an unescorted merchant ship without first sending over a boarding party to decide if its cargo was contraband.

Whatever the rights and wrongs of commerce raiding, any last doubts about the value of torpedo-equipped submarines vanished in 1914, less than two months after the outbreak of war, when Germany's *U-9*, commanded by a 32-year-old on his first tour of

duty, hit HMS *Aboukir* with a torpedo and she sank before the life-boats could be lowered. HMS *Cressy* lowered her boats to pick up men in the water, but while so doing was hit by a second torpedo. A third torpedo hit HMS *Hogue*, which also sank immediately. More than 1,600 sailors died. About three weeks later the same rather primitive type of submarine sank the cruiser HMS *Hawke*.

The development of wireless was changing naval warfare, as it was changing everything else. The admirals seized upon it, for it gave the men behind desks the means of controlling the units at sea. Intelligence officers saw that enemy ships transmitting wireless signals could be located by direction-finding apparatus. Better still, such radio traffic could be intercepted, the codes broken, and messages read.

Intercepted wireless signals played a part in the battle of Jutland in 1916, when Britain's Grand Fleet and the German High Seas fleet clashed in the only modern battleship action fought in European waters. Lack of flash doors caused HMS *Queen Mary* to disappear in an explosion, HMS *Indefatigable* blew up and sank leaving only two survivors, and HMS *Lion* was only saved because a mortally wounded turret commander ordered the closing of the magazine doors. The loss of the Royal Navy's three battle cruisers and three armoured cruisers could all be ascribed to their inadequate upper protection.

There were many ways to evaluate the battle of Jutland, and both sides celebrated a victory with all the medals and congratulatory exchanges that victory brings for the higher ranks. In tonnage and human lives lost the British suffered far more than the Germans, but the Royal Navy was more resilient. The British were seafarers by tradition, and regular long-service sailors who fought the battle accepted its horrors in a way that conscripted German sailors did not. Britain's Grand Fleet took its sinkings philosophically. Within a few hours of returning to Scapa Flow and Rosyth, the fleet reported itself ready to steam at four hours' notice.

There can be no doubt however that Britain's technological shortcomings were startlingly evident at Jutland. Once the envy

of all the world, Britain's steel output had now sunk to third place after the United States and Germany, and German steels were of higher quality. Anyone studying the battle had to conclude that German ships were better designed and better made, that German guns were more accurate and German shells penetrated British armour while many of the Royal Navy's hits caused little damage.

Radio had also played a part in the battle. Helped by codebooks the Russians salvaged from a sunk German cruiser, the men in Room 40 at the Admiralty ended the war able to read all three German naval codes. After the war the work in Room 40 was kept completely secret so that even the official history made only passing mention of it.

By the end of 1916, despite patrols by planes, dirigibles and thousands of ships, U-boats had sunk 1,360 ships. The German U-boat service, which grew to 100 submarines, had lost only four of them to enemy action. The Admiralty stubbornly refused to inaugurate a convoy system, and produced rather bogus figures to 'prove' that convoys would block up the ports and harbours. Convoys might never have been started but for the French government insisting that their cross-Channel colliers sailed in convoy. The result was dramatic but the Admiralty remained unconvinced. Perhaps the Admiralty officials thought that escorting dirty old merchant ships was not a fitting task for gallant young naval officers. Whatever their reasons, it took an ultimatum from the prime minister to make them change their minds. (Although later the admirals petulantly said they were about to do it anyway.) When convoys began in May 1917, only ships that could do better than 7 knots, and could not attain 12 knots, were allowed to join them. Losses fell about 90 per cent. The British had come close to losing the war, and before the effect of the convoy system became evident the nerve of the first sea lord, Admiral Jellicoe, broke. On 20 June he told a high-level conference that, owing to the U-boats, Great Britain would not be able to continue the war into 1918. He proved wrong and, thanks to the convoys, the crisis abated.



German U-boats continued sinking passenger ships even after negotiations for peace began on 3 October 1918. The following day *Hiramo Maru* was sunk off the Irish coast, killing 292 out of the 320 aboard. The following week the Irish mail boat *Leinster* was torpedoed without warning and torpedoed again while it was sinking: 527 drowned. 'Brutes they were, and brutes they remain,' said Britain's foreign secretary. President Wilson warned that America wouldn't consider an armistice so long as Germany continued its 'illegal and inhuman practices'. The U-boat's Parthian shots had not helped to create a climate suited to negotiations for a lasting peace.

By the time the First World War ended, about 200 U-boats had been sunk, but the submarine menace had been countered only by means of escorted convoys and the use of about 5,000 ships, hundreds of miles of steel nets and a million depth charges, mines, bombs and shells. Yet for those who wanted to find it, the most important lesson of the 1914–18 war in the Atlantic lay in the statistics. In the whole conflict only five ships were sunk by submarines when both surface escort and air patrol was provided, and this despite the fact that no airborne anti-submarine weapon had been developed.

## DAYS OF WINE AND ROSES

*The man who with undaunted toils  
Sails unknown seas to unknown soils  
With various wonders feasts his sight:  
What stranger wonders does he write!*

John Gay, 'The Elephant and The Bookseller'

By the end of the First World War Britain was exhausted, financially bankrupt and in debt to the USA. The Empire, having made a selfless and spontaneous commitment to the war, no longer wanted to be ruled by men of Whitehall. British leaders, both civilian and military, had proved inept in conducting a war which, had the United States not entered it, Germany might well have won.

In 1922, Britain formally acknowledged her declining power. Since Nelson's day Britain's declared policy was to have a navy as strong as any two navies that could possibly be used against her. Even into the 1890s Britain was spending twice as much on her fleet as any other nation. With the Washington treaty of 1922 such days were gone. The politicians agreed that the navies of Britain, USA and Japan should be in the ratio of 5:5:3. Britain also accepted limitations upon the specifications of its battleships, and promised not to develop Hong Kong as a naval base and to withdraw altogether from Wei-hai-wei, China. In conforming to the treaty, the Royal Navy scrapped 657 ships including 26 battleships and battle-cruisers. One history of the British Empire comments: 'So ended Britain's absolute command of the seas, the mainstay and in some sense the *raison d'être* of her Empire.'<sup>1</sup>

After the First World War, the surrendered German fleet sailed to Scapa Flow, between Orkney and the Scottish mainland. There,

in a gesture of defiance, they scuttled all their ships. This provided Germany with a chance to start again with hand-picked personnel and modern well-designed ships, while the victorious nations were patching up their old ships to save money.

The treaty of Versailles stipulated that Germany's navy must be kept very small but in June 1935, acting without reference to friends or enemies, the British government signed an Anglo-German naval agreement permitting Hitler to build a substantial navy, up to 35 per cent as strong as the Royal Navy, and include battleships, virtually unlimited submarines and eventually cruisers and aircraft-carriers.<sup>2</sup>

This notable concession to Hitler's belligerence encouraged him to ever more reckless moves and deeply offended Britain's closest ally France. It went against all Britain's international undertakings and, in grossly breaching the peace treaty, nullified it. The first lord of the Admiralty said: 'the naval staff were satisfied and had been anxious to bring about an agreement'. Stabilization of Anglo-German naval competition would release RN ships to distant waters. Perhaps the British politicians – and the men in the Admiralty who advised them – believed that showing good will towards the Nazis would bring lasting peace. One suspects that it revealed some calculation in the minds of Britain's leaders that a more powerful Fascist Germany would keep Communist Russia contained.

Significantly perhaps, the Reichsmarine was renamed Kriegsmarine and the Germans began building immediately. Germany's four biggest battleships, *Scharnhorst*, *Gneisenau*, *Bismarck* and *Tirpitz*, which were later to give the Royal Navy so many sleepless nights, were laid down as an immediate result of this treaty. The following year Germany agreed – in the London Submarine Protocol of 3 September 1936 – that it would adhere strictly to the international prize law, which provided for the safety of merchant ship passengers and crews in time of war.

In 1937 came a supplement to the 1935 treaty. A German naval historian, Edward P. von der Porten, has described it as 'a German

attempt to convince the British of sincerity'. The Germans affirmed that they would build no battleships bigger than 35,000 tons. The *Bismarck* and *Tirpitz*, then in production, were 41,700 and 42,900 tons respectively. The extra tonnage, explained U-boat C-in-C Karl Dönitz after the war, was for 'added defensive features'. In fact the extra size was due to Hitler specifying 15-inch guns instead of the previous 11-inch ones.

While German shipyards were producing these impressive warships Britain's shipbuilding industry was antiquated and inefficient. It had suffered from the strikes and slumps that other British industry knew well. Yet while Britain's merchant navy, although still large, was in decline, no such decline befell the bureaucrats of Whitehall. In 1914, with 62 capital ships in commission, the Admiralty employed 2,000 officials. By 1928 – with only 20 capital ships in commission, and the Royal Navy officers and men reduced from 146,000 to 100,000 – there were 3,569 Admiralty employees. Although the Washington naval treaty prevented any increase in Britain's naval forces, there were by 1935 no less than 8,118 Admiralty staff on the payroll.<sup>3</sup>

Germany had ended the war without ships or shipbuilding facilities but the creation of a strong navy and a merchant fleet had been decided upon long before Hitler came to power. In the summer of 1929 these plans bore fruit as the ocean liner *Bremen* snatched the Atlantic Blue Riband from the elderly British liner *Mauretania*. The following year *Bremen's* sister ship *Europa* took the record. Both German liners displaced about 50,000 tons, with top speeds of about 27 knots. These products of German shipyards were given energetic publicity by the Nazi propaganda machine. Germany had staked its claim to the Atlantic sea routes and intended to remain there.

### **Equipping for war**

On Sunday 3 September 1939 Britain declared war on Germany. Although there were no treaty obligations between Britain and the Dominions, Australia and New Zealand also declared war at once.

The Canadians declared war on Germany after Britain (but were later to declare war on Japan before Britain). South Africa followed after some fierce parliamentary debate, and the Viceroy took a similar decision for India seemingly without reference to anyone. Virtually the whole of the Empire and Commonwealth, from Ascension Island to the Falklands, joined the mother country. A newly independent Ireland remained neutral and was represented in Berlin throughout the war by an ambassador accredited in the name of King George.

In the course of time, 5 million fighting troops were raised from these overseas countries, with India contributing the largest volunteer army that history had ever recorded.<sup>4</sup> But warships were in scarce supply. The navy was still regarded as the factor which both bound the countries of the Empire and protected their sea routes. So, for Britain's Royal Navy, the war was a global one right from the first hour of hostilities.

Britain went to war with a Royal Navy that was highly skilled and totally professional, although its officers and men were poorly educated when compared with men of the other industrialized nations. Most of its 109,000 sailors had joined as boys aged sixteen, and most of its 10,000 officers as thirteen-year-old cadets. Steeped in tradition, its ratings wearing curious old uniforms which could not be put on without help, the navy provided a tot of rum each day for every man, and the fleet retained corporal punishment long after the other services had abolished it.

When wartime's compulsory military service first sent civilians to sea, they regarded this narrow-minded, time-warped community with awe. They took it over, and changed it for ever. Soon the regular sailors with their distinctive rank badges were outnumbered by HO (Hostilities Only) ratings and RNVR (Volunteer Reserve) officers with 'wavy-navy' rings on their cuffs. By the middle of 1944 the wartime navy totalled 863,500 personnel of whom 73,500 were WRNS (Women's Royal Naval Service). The sailors who fought and won the Atlantic battle were in the main civilians.

When war started the Admiralty was calm and confident. With fifteen battleships, of which thirteen had been built before 1918 (and ten of these were designed before 1914), and six aircraft-carriers of which only HMS *Ark Royal* was not converted from other ships' hulls, it knew exactly what sort of war it was going to fight. Unfortunately Germany's naval staff, the Seekriegsleitung (SKL), had a different rule book.

A less parsimonious British government or a more realistic Royal Navy might have expected the Germans to break their agreements, but the interwar years had been noted for self-delusion, and the admirals did not readily learn lessons. The Royal Navy seemed indifferent to the threat of air attack. Its multiple pom-pom anti-aircraft guns had proved completely ineffective, but only when war was imminent were Swedish Bofors and Swiss Oerlikon guns put into production.

A closed eye had been turned to the potential of the submarine. With lofty disdain, most Royal Navy officers regarded the submarine service as a refuge for officers of low ability. Submarines participating in fleet exercises were always ordered to withdraw during the hours of darkness. Anyone who suggested that in a future war the enemy might not be willing to withdraw during the hours of darkness was told that the miracle apparatus asdic could counter submarines.

Asdic (later named sonar) was a crude device first introduced at the end of the First World War, although never used operationally in that war. Mounted under a ship's hull, it emitted sound waves and picked up their reflections to detect submarines. Always demonstrated in perfect weather by well-rehearsed crews, it enabled a confident Admiralty to declare the U-boat to be a weapon of the past. By 1937 the Naval Staff said that 'the submarine would never again be able to present us with the problem we were faced with in 1917'. Even if the Admiralty's assessment of asdic had been right, there were only 220 warships equipped with it, while the British merchant service had 3,000 oceangoing ships and 1,000 large coasters to be protected.

The range of the asdic was a mile at best. It could not pierce the layers of differing temperature and salinity that are commonly found in large bodies of water. Nor could it be used by a ship steaming at more than 20 knots, or in rough weather. It was useless in locating a surfaced submarine and did not reveal the depth of a submerged one. All of these shortcomings could benefit a skilful U-boat commander, and it might have been remembered that by the end of the First World War attacks by surfaced U-boats had become the favoured tactic.

Admirals everywhere prefer big ships. The United States navy lined them up in Pearl Harbor and, even in the middle of the war, German admirals were still telling each other that the battleship was the most important naval weapon and pressing for a programme to build more and more of them. So the British navy, like the United States navy, began the war with plenty of expensive battleships for which there was little or no need and a grave shortage of small escort vessels.

Canada wanted to make a contribution to the war without having its soldiers decimated at the commands of British generals on some new 'western front'. It elected to concentrate on ships, which could be kept under its own control. The Canadian navy started a construction programme exclusively devoted to escort

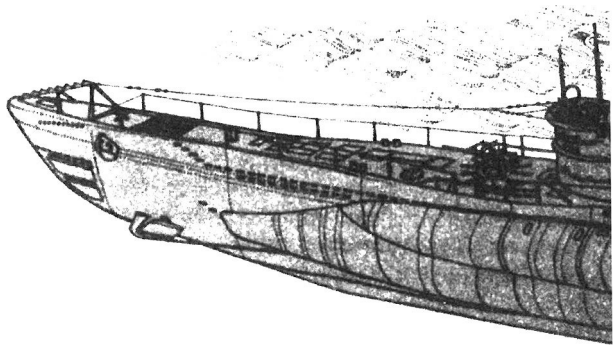


FIGURE 2

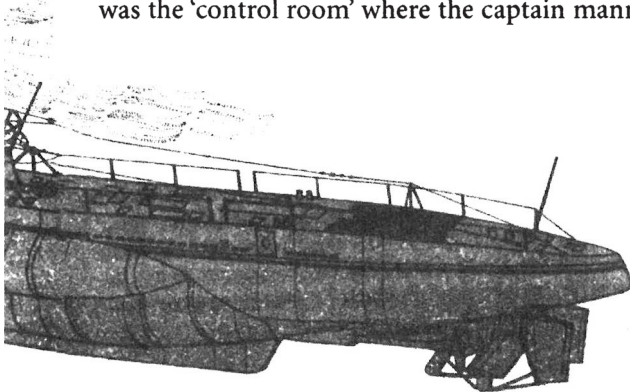
German submarine U-boat, type V11C

vessels – corvettes and frigates – to protect the Atlantic traffic. The corvettes were slow and seaworthy, although the way in which they rolled and wallowed from wave top to wave top made crewing them one of the war's most queasy assignments. Nevertheless by May 1942 Canada had 300 ships – a magnificent achievement.

### **The U-boat**

Since the First World War, submarine design had improved only marginally, and then chiefly in greater hull strength. This enabled them to dive far deeper, and provided escape for many U-boats under attack. (Due largely to inter-departmental squabbles, it took some time before British depth charges were designed for deep water use.) Although more efficient electric batteries enabled submarines to stay submerged longer, they still spent almost all their time on the surface, submerging only to escape attacks from the air or avoid very rough seas.

A submarine of this period consisted of a cylindrical pressure hull like a gigantic steel sewer pipe. To this pipe, a stern and bow were welded and the whole vessel was clad in external casing to give it some 'sea-keeping capability', although submarines could never be manoeuvred like ships with regular hulls. A casing deck and a conning tower – what the Germans called an 'attack centre' – was added to the structure. Directly below the conning tower was the 'control room' where the captain manned the periscope.





The tower was given outer cladding to provide some weather protection to men standing there, as well as some measure of streamlining when the boat went underwater. An electric motor room and an engine room with supercharged diesels of about 3,000 bhp were positioned well aft for the sake of sea-keeping and to cut diving time. The great bulk of a submarine was below the water-line, and visitors going below are always surprised to discover how big they are, compared with the portion visible above water. For instance, the long-range Type IXC U-boat that displaced 1,178 tons submerged would still displace 1,051 tons when on the surface.

There were two basic types of German U-boat used operationally in the Atlantic campaign, the big long-range Type IX and the smaller Type VII, which was the standard German U-boat of the Second World War.<sup>5</sup> The VII typically had a displacement of 626 tons, a crew of four officers and forty-four ratings (enlisted men), and carried about fourteen 21-inch torpedoes. Four tubes faced forward and one aft. All the tubes were kept loaded and when they had been fired, the awkward business of reloading had to be done. On the surface the diesel engines gave a range of 7,900 nautical miles at 10 knots. If they pushed the speed up to 12 knots it would reduce their range to 6,500 nautical miles. In an emergency the diesels could give 17 knots for short periods. With a fully trained crew a Type VII dived in thirty seconds and when submerged used electric motors. The rechargeable batteries could go for about 80 nautical miles at 4 knots. Maximum speed underwater was reckoned to be 7.5 knots, depending upon gun platforms which obstructed the water flow. Most reference books give manufacturer's specification speeds which are faster than this.

The whole purpose of the submarines was to fire torpedoes. These big G7 – seven metres long – devices were no less complicated than the submarine itself, and in some respects exactly like them. They were treated with extraordinary care. Each torpedo arrived complete with a certificate to show that its delicate mechanisms had been tested by firing over a range. It had been

transported in a specially designed railway wagon to avoid risk of it being jolted or shaken. One by one, with infinite concern, the 'eels' were loaded into the U-boat, which was usually moored inside a massive concrete pen. From then onwards, all through the voyage, each and every eel would be hung up in slings every few days, so that the specialists could check its battery charge, pistons, propellers, bearings, hydroplanes, rudders, lubrication points and guidance system.

To make an attack it was necessary to estimate the bearing and track of the target. Usually the submarine was surfaced, and the captain used the UZO (*U-Boot-Zieloptik*) which was attached to its steel mounting on the conning tower. This large binocular device had excellent light-transmission capability, even in semi-darkness, and from it the bearing, range and angle of the target vessel was sent down to the *Vorhaltrechner*. This calculator sent the target details to the torpedo launch device, *Schuss-Empfänger*, and right into the torpedoes, continuing to adjust the settings automatically as the U-boat moved its relative position. By means of these instruments the U-boat did not have to be heading for its target at the moment of launching its torpedo. The torpedo's gyro mechanism would correct its heading after exiting the tube. Thus a 'fan' of shots, each on a slightly different bearing, could be fired without turning the boat. This device was coveted by British submarine skippers who aimed their torpedoes by heading their submarines towards the target.

By using 'wakeless' electric G7e torpedoes – and suppressing the water swell – a submarine could fire without betraying its position. Smaller targets were sunk by means of the deck gun, which was usually an 8.8-cm artillery piece. To fire it in anything but calm water without going overboard demanded the agility of an acrobat. Hitting anything other than a large target was very difficult. When war began there was also a single 2-cm Flak gun (short for *Flugabwehrkanone*, anti-aircraft gun) but this proved of little use against aircraft and bigger and better ones were fitted as the war continued.