

THE BATTLE OF JUTLAND: THE DAWN OF OVER-THE-HORIZON WARFARE

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The Battle of Jutland was the only direct encounter between the main battle fleets of Britain and Germany during the First World War. The engagement must be of profound technical and tactical interest to artillery specialists, highlighting as it did so many of the challenges which new technology and the operating environment presented for gunnery. But it is important to note that the battle of 31 May and 1 June 1916 had strategic significance as well. It represented a key point in the global maritime war of supply which was being waged alongside the titanic struggle on land – a contest on which the capability of both sides to wage a protracted industrial war directly depended.

The British Isles lay across the German access routes to the world oceans, while Britain and its allies controlled the bulk of the world's merchant navies. German merchant ships had been driven from the seas. But the British economic blockade, while increasingly effective, was incomplete because Germany still had indirect access through the Netherlands and Scandinavia. While a profit minded United States remained neutral, the Allies had to be very careful about just how they acted to restrict German supplies. On the other hand, the German frustration with their situation meant that they had looked to the U-Boat to attack the Allied supply routes. This was an emotional, rather than a calculated response, particularly when the Germans decided to embark on sinking merchant ships without warning, a breach of historical international law and custom. The visceral American reaction to the loss of their nationals forced the Germans to back away from the campaign.

This brought new attention to ending the stand-off in the North Sea which had prevailed since the start of the war. The German High Sea Fleet was powerful enough that the British Grand Fleet could not attack the German coast directly, but it was not so strong that it could break the Grand Fleet's control of the access to the global commons – unless, that is, the Grand Fleet could be reduced to a point at which the High Sea Fleet would have a chance of winning. A new fleet commander, Reinhard Scheer, decided to re-deploy the U-Boats and attempt to draw the British into submarine traps, always in the hope that his main fleet could isolate and destroy a major British detachment. The British had a good idea of what the Germans wanted to try, but had the priceless advantage of being able to read the German codes. Thus, when Scheer decided to sail the High Sea Fleet, the British detected the preparations early enough that the main British forces were actually at sea before the High Sea Fleet had left its anchorages.

Jutland came after twenty years of incredibly rapid development in naval gunnery. It is important to understand that firepower at sea is dominated by the practical problem of achieving a firing solution from a moving platform against a moving target without fixed external references. In the days of smooth bore, round shot cannon, the solution was to fight at the closest possible ranges – ideally no more than a couple of hundred yards. But the combination of the development of precision manufactured, rifled guns with the much greater ballistic ranges that they could achieve, together with the emergence of the asymmetric threat of the 'locomotive' torpedo meant that fighting ranges *had* to increase. And, from 1896, they did. What rapidly became obvious was that the best trained gun layers could not exploit the full range of their weapons by eye alone. To the simple telescope were added progressively longer base rangefinders, followed by centralised control from a single

point in the ship, known as 'director control'. At the same time, there were efforts to develop mechanical and then electro-mechanical calculators to solve the complicated mathematics involved in predicting a fire control solution in which range was not only changing, but changing at different rates – which rates were also themselves changing. By the beginning of the First World War, the first of these systems were at sea in the Royal Navy, the complex 'transmitting station' computing system being manned, ironically, by Royal Marine Bandsmen, whose intelligence, literacy and manual dexterity made them ideal for the role. The proliferation of bands in British capital ships in the years before 1914 was not, in other words, symptomatic of a navy obsessed with ceremonial. It was a manning solution to a novel warfighting problem made by what, however imperfect, was the most technologically advanced organisation in the world.

These innovations came only just in time because many of the same developments that supported improved gunnery assisted other weapons. The gyroscope had greatly increased the accuracy of the torpedo which, together with improved propulsion, meant that the range of the newest torpedoes could match that of the biggest guns. In the years immediately before the war, the advent of the efficient seagoing submarine added another complication. Battleships could no longer operate by themselves, supported by a few scouting vessels. They now needed to have large numbers of screening cruisers and destroyers, both as protection against surface torpedo craft and submarines and as offensive torpedo firers themselves. This created vast new problems for command and control – in 1906, the average sea going battle force numbered less than 20 vessels. At Jutland there were 151 ships in the British formations and 99 in the German.

Radio allowed this new situation to be managed, but brought many difficulties of its own. The new communications systems combined with the increased fleet sizes to mean that naval warfare at the tactical level acquired a remote dimension for the first time. Before radio, all naval tactics were visual. The change brought about a battery of problems for procedures, doctrine and for the culture of command. The admiral when out of sight was no longer out of mind to his subordinates and this created enormous potential for misunderstanding and missed opportunities. Furthermore, given that the navigational problems meant that no ship out of sight of land for more than a few hours could usually be sure of their position within a radius of five nautical miles, even when reporting methods were developed and implemented, the pool of errors could well be more than the visibility. The combined errors between the two main British flagships at Jutland amounted to more than twelve nautical miles. The average visibility in the North Sea was between three and eight nautical miles. It was frequently much less and, as at Jutland, a day on which visibility started as excellent could find it deteriorate rapidly, not only through natural causes but by the development of an industrial smog put out by dozens of large coal burning vessels steaming at high speed.

The tactical problem was exacerbated by the fact that the only workable gunnery formation for big ships was the single line ahead. Given that there were, in the case of the British, 24 ships in the battle line of the main fleet under Admiral Jellicoe, the result was a line six nautical miles long – of which the ships themselves occupied 40% of the space, with less than 300 yards between each unit. The key problem was to ensure that fire could be concentrated on the enemy without allowing the enemy to concentrate their fire on one part of the force. The ideal situation, very difficult to achieve in practice, was to 'cross the T' – to put the line across the head of the enemy formation and overwhelm the leading units, one by one.

In reality, the response, as happened at Jutland, would be a massed attack by the supporting light craft and this would present a dilemma for the opposing commander. If the line maintained its course, the probability of a torpedo hit was 40% in simple terms. If the ships turned away together, that probability could be reduced to a few percent. Turning towards might reduce the target area, but provided opportunities for a renewed torpedo attack. The difficulty with a turn away was that it not only disrupted the artillery engagement, but risked losing visual contact and allowing the enemy to withdraw.

Six British battle cruisers under David Beatty sailed from Rosyth, supplemented by four fast battleships of the Fifth Battle Squadron. From Cromarty Forth and Scapa Flow in the north-west came the 24 battleships and three battle cruisers of the main body of the Grand Fleet under the C-in-C, John Jellicoe. From the south-east and the Heligoland Bight came the five German battle cruisers under Franz Hipper, followed by the 16 dreadnoughts and six pre-dreadnoughts of the High Sea Fleet under Reinhard Scheer.

Ironically, on a day in which the visibility started off as excellent, the scouts of the two battle cruiser forces only made contact because of a puff of smoke from a Danish steamer, stopped for examination by a German torpedo boat. Three main phases followed – firstly, the battle cruiser encounter, which initially ran south as Beatty chased Hipper and then reversed course north as Beatty sought to evade the High Sea Fleet and find Jellicoe. Second came the encounter between the main battle fleets and the third was the night phase, in which the German fleet crossed astern of the main British formation in darkness and succeeded in winning free to its base.

The run to the south was marked by the catastrophic sinking of two British battle cruisers, the *Indefatigable* and the *Queen Mary* and by the mishandling by David Beatty of the powerful battleships temporarily attached to his force which meant that they were late to get into action. British battle cruiser gunnery was poor and a fixation on achieving high rates of fire had resulted in almost criminal neglect of basic anti-flash precautions. It is true that the British battle cruiser armour could not keep out German shell, but it was the failure to keep the anti-flash doors and scuttles and reduce the amount of ready use propellant lying in the ammunition handling rooms below the turrets that killed the British ships. HMS *Lion*, Beatty's flagship, survived because her warrant officer gunner had insisted that the anti-flash precautions had to be implemented. As he was able to achieve this by proving that it would not affect the rate of fire, one can only wonder why no other ship was not forced to do the same.

The British were also stymied by the poor quality of their own shells, which often broke up without penetrating the thickness of German armour which they should. The heavier calibre British shells – up to 15" (38cm) against the German maximum at this time of 12" (30cm) – thus did not have the effect expected. In fact, not all German shells performed that well, either.

There was a rapid turn-around as the High Sea Fleet came in sight – again, Beatty mishandled his attached battleships, but he did succeed in getting the Germans to follow him straight into the arms of the Grand Fleet. Despite very poor reporting from Beatty and almost all the other British scouts, as well as the cumulative twelve mile error in the relative positions that *were* reported, Jellicoe put his fleet into battle line heading towards the south-east and crossed the 'T' of the German battle fleet. In increasingly poor visibility, on both sides there was uncertainty and confusion amongst the commanders and individual formations and units. The British lost another battle cruiser and an

armoured cruiser (the latter taking two RAN officers with it) to explosion, but the German position was untenable and Scheer was forced to turn away. Extraordinarily – and the German fleet commander was never able to properly explain why he did so, soon afterwards Scheer turned his ships back towards the British. Perhaps in the increasing gloom and haze – getting worse all the time from the funnel smoke of so many coal burning ships – he thought he could catch and overwhelm a section of the British line. No such thing, and he was almost immediately forced to turn away again, sending his battle cruisers on a ‘death ride’ and unleashing his torpedo boats to cover the retreat of his battleships. Faced with a massed torpedo attack, Jellicoe did what he always said he would and turned away. This was one of the most controversial decisions of the battle by the admiral who Churchill said was the only man who could lose the war in an afternoon. But turning away reduced the probability of a torpedo hit to the minimum and also meant that the enemy torpedo boats could not have another crack at reduced range. Only one British battleship was hit by a torpedo during the entire battle. In turning away, however, in what was ever reducing visibility, the British battle line lost sight of its German opponent. Jellicoe has been greatly criticised for his action, but he had put himself at this point *between* the High Sea Fleet and its bases. He had the advantage of relative position.

It was the next stage of the battle that saw the most critical British failures and for which Jellicoe can fairly be criticised. As darkness fell, Jellicoe headed south to keep himself between the Germans and their home bases. He put his light craft in the rear of the battle squadrons. A desperate Scheer eventually turned for home and, as a later study of the battle described it, what was a converging ‘v’ turned into an ‘x’ as the Germans crossed astern of the British – and then into an upside down ‘v’ as the High Sea Fleet won clear. They did not go unopposed. A series of ferocious encounters ensued, which resulted in another British armoured cruiser blowing up, together with an old German battleship. When there was no other sensor but the human eye, the result was a form of seaborne hand to hand combat. In one encounter, the destroyer *Spitfire* collided with the German battleship *Nassau*. *Spitfire*’s superstructure was flattened by gunfire, but there were nearly seven metres of *Nassau*’s side plate left on her upper deck when the destroyer broke free. *Spitfire* made it home.

Despite much evidence of what was happening, the German movement was never reported to the British commander, Jellicoe – nor did he himself realise what was in progress, although he should have. As should at least two of his immediate subordinates who could see explosions and lights steadily moving from north to east behind them. It is likely that extreme fatigue played a significant part in this dereliction.

When 1 June dawned, the Grand Fleet was left with an empty horizon to contemplate. Three British battle cruisers and eleven other ships had been sunk, while the smaller High Sea Fleet had lost only a battle cruiser, an old pre-dreadnought battleship and nine other vessels. Bitter arguments continue over whether Jutland was a tactical victory or defeat or whether it was a strategic victory or a defeat. The author agrees with the American journalist who observed that the German fleet had assaulted its jailer, but was still in jail. What was less obvious in measuring the balance than the sinkings was that many more German major units had been heavily damaged than had British ships. Nevertheless, destruction of the High Sea Fleet would have opened a whole range of strategic opportunities to the British which might well have shortened the war. David Lloyd George, it might be noted, repeatedly expressed this view in private conversations in later years.

It is a myth that the High Sea Fleet did not emerge after Jutland until its ignominious surrender in November 1918. Scheer tried again to attrite the Grand Fleet in August 1916, positioning his U-Boats offshore in multiple lines, rather than around the British bases, and using Zeppelin airships to provide him early warning of the British. Through a series of misunderstandings and false reports, the main fleets did not meet and, although the British lost two light cruisers to torpedoes and the battle cruiser HMAS *Australia*, amongst others, was near-missed, no British capital ship was hit. Ironically, a German battleship was – by a torpedo from submarine *E-23*. The events of 18-19 August confirmed Scheer's judgement that the best German option, despite the risk of America entering the war, was a renewed unrestricted U-Boat campaign. After much debate within Germany, this would resume in February 1917 and bring the United States into the war in April 1917. For their part, the British were sufficiently concerned by the loss of the two light cruisers to restrict the movement of the Grand Fleet in future operations. From this point, a main fleet encounter became almost impossible. Only in April 1918 would the High Sea Fleet venture again into the North Sea and this sortie would be aborted as the result of mechanical problems.

The fact that the maritime war would be largely focused on submarine and anti-submarine warfare after 1916 did not, however, slow the pace of innovation in artillery. The British in particular rapidly developed new techniques of two and four-ship concentrated fire, with kite balloons and aircraft to spot for the fall of shot. They also sought to develop ways of attacking the High Sea Fleet at its anchorages. Although there were many failures and false starts, by October 1918 the first true flush deck aircraft carrier, HMS *Argus*, had joined the Grand Fleet and begun to work up her squadron of torpedo bombers. A new era of naval warfare was dawning.

There is an artillery footnote for *Australia* and what may be an important relic of Jutland in Australian hands at the AWM. The 28cm weapon known as the 'Amiens Gun', captured by Australian units on the Western Front on the 'black day' of the German Army on 8 August 1918 was, before its modification to a railway gun, a naval weapon. It is believed to have been one of four mounted in the pre-dreadnought SMS *Hessen*, which formed part of the Second Squadron of the High Sea Fleet at Jutland. We know that *Hessen* fired five main armament rounds on 31 May/1 June 1916, although we do not – yet – know whether the Amiens Gun fired any of them. It may be that this weapon is the only main armament gun from the battle left above water.