

The Lion, the Eagle, and the High Seas

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To Ed for tearing me apart and Mary for building me back up.

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You have given us their army, and we have given you their fleet.

Field Marshall Sir Henry Wilson to Admiral Sir David Beatty, 21 November 1918

Behind that statement was a well-founded truth. It was the British blockade which caused the food riots in Germany, breakdown in morale, and helped bring down the Imperial structure. It also concealed a premonition. The rise of Hitler and remilitarization of Germany in the 1930s would not, could not, be confined solely to the army. The navy would have to expand and there was only one navy that Germany truly expected to fight on its rise to hegemony in Europe.

The tensions leading up to World War II saw both the Kriegsmarine (German Navy) and the Royal Navy prepare for a conflict that neither wanted. What brought about this reluctant hostility, what did each nation do to prepare, and most crucially, which plan was better?

The roots of Anglo-German naval antagonism are a good place to start. Until 1897 relations with Britain had been good. Prussian troops had fought with Wellington at Waterloo and Prussia had been rewarded with large tracts of land in Westphalia and on the banks of the Rhine. However, the ascent of Alfred Tirpitz to command of the German fleet in 1897 changed the status quo for the worse.¹ Having been influenced by Alfred Thayer Mahan's book, *The Influence of Sea Power Upon History*, Tirpitz was a vocal proponent of a large, oceangoing German navy.² Unfortunately for Germany, a fleet in the North Sea was a proposition that the Royal Navy could not let stand, especially since the stated reasoning for the fleet was to challenge British naval

¹Edgar Feuchtwanger, *Imperial Germany: 1850-1918*. (London: Routledge, 2001), 132.

²Mahan had argued that a navy was an essential tool for the projection of a nation's power and prestige at sea. Unfortunately, Tirpitz ignored the fact that out of the six "general conditions affecting sea-power," Germany was completely deficient in three of them and had serious issues with a fourth. England, whose navy was the primary focus of the German buildup, suffered from no deficiencies, indeed England was the model from which those conditions were derived. Alfred T. Mahan, *The Influence of Sea Power Upon History: 1660-1783* (Boston: Little, Brown, and Company, 1898), 29-67.

power.³ Germany, was starting from scratch though, and any ambitions they had of challenging Britain were years away from fruition.

The situation changed dramatically in 1906. The launch of the *Dreadnought* revolutionized naval warfare and, in many ways, rendered all existing battleships obsolete. Here was Germany's chance to catch up to Britain and Tirpitz attempted to seize it. Tirpitz erred, though, in estimating Britain's capabilities and resolve to reign supreme on the seas. Under First Sea Lord John Fisher's leadership, Britain not only kept pace, but *outpaced* the German naval buildup.

As Table 1 shows, even by 1914, the Germans could not stand up against the British fleet. Their naval buildup only antagonized Britain and ruined what had been excellent relations between the two nations. The German High Seas Fleet did little more than rust away during the war. The decisive battle both sides wanted occurred at Jutland and ended in little more than a draw. The German navy would sail forth in force only once after that: to surrender.

Table 1. The Naval Strengths of Britain and Germany in 1914

	British	German
Battleships	32	17
Battle Cruisers	10	6
Pre-dreadnoughts	38	20
Cruisers and Destroyers	336	197

Source: Jack Greene, "Naval Balance (1914)," in *Encyclopedia of World War One: A Political, Social, and Military History*.

The Treaty of Versailles left the Germany navy a hollow shell of its former self. The High Seas Fleet had been scuttled and five modern light cruisers were taken as reparations.⁴ Germany

³Feuchtwanger, 132-133.

⁴Cajus Bekker, *The German Navy: 1939-1945*, First American. (New York: The Dial Press, 1974), 8.

was limited to a navy of 15,000 men. The allied powers allowed Germany to have six armored ships (10,000 tons maximum with 11-inch guns), six light cruisers (6,000 tons with 6-inch guns), twelve destroyers (800 tons) and twelve torpedo boats (200 tons).⁵ That was not much of a navy, but during the Weimar period they made it work. The restriction on personnel allowed the German Navy to accept only the best people, who would form the core of the Kriegsmarine years down the road.⁶ Nevertheless, German naval power had been eliminated.

The experience of a naval race with Germany had left an impression on Britain, and it was something that did not want to go through again. After Hitler came to power in 1933 there was a desire in Britain to limit German naval ambitions. The Germans mirrored this desire and together efforts to maintain amicable relations culminated in the Anglo-German Naval Treaty of 1935.

The signing of that treaty legalized Germany's rearmament. It assuaged fears in Britain of another naval arms race, but Germany benefited more.⁷ German naval historian Cajus Bekker would summarize the benefits to Germany:

The advantages for Germany were clear: till now she had secretly violated the arms limitation clauses of the Treaty of Versailles; now this conduct had been legalized. For the first time, an erstwhile enemy nation had, in a two-page treaty, given its assent to the creation of a German Navy, and had, with a stroke of the pen, shelved the Treaty of Versailles.⁸

The treaty gave Germany the right to build a fleet a third the size of Britain's.⁹ In terms of raw tonnage, this amounted to 400,000 of which 180,000 could go towards battleship

⁵Ibid.

⁶Erich Raeder, *My Life*, trans. Henry W. Drexel (Annapolis: Naval Institute Press, 1960), 162.

⁷On 26 June 1935, in the House of Lords, Admiral Earl Beatty, said "That we do not have an armament race with one nation in the world at least is something for which we must be thankful." Ibid, 187.

⁸Bekker, 34.

⁹Ibid.

construction.¹⁰ Practically, that would allow for four battleships weighing in at 45,000 tons apiece. At that time, though, the Royal Navy had twelve battleships, three battle cruisers, eight carriers, fifty-four cruisers, and 169 destroyers.¹¹ Even if Germany wanted to violate the Anglo-German Naval Treaty and match that fleet, it would be years in the making and Britain would have plenty of time to react.

By 1939 Germany would try. The Kriegsmarine strategy to challenge the Royal Navy at sea by 1944 was called the Z-Plan, but it would never see the light of day. It began on January 29, 1939 and just over seven months later, Germany would find itself at war. The Z-Plan was immediately cancelled and the resources sent to more pressing needs.¹²

What if war had not broken out? The Z-Plan had been promised top priority in resources by Hitler.¹³ Could the Z-Plan have provided the Germans with a fleet strong enough to break British control of the seas? The answer to that question lies in the plans of both navies at the start of World War Two.

On September 1st, 1939, Germany invaded Poland, the German Navy could put to sea a force of two battleships, three “pocket battleships”, two heavy cruisers, six light cruisers, and a total of thirty-four destroyers and torpedo boats.¹⁴ In the later stages of construction were two more battleships, two aircraft carriers, four heavy cruisers, and eight destroyers.¹⁵ This navy was vastly outnumbered by the British navy, and was also weaker than the numbers suggest.

¹⁰G.H Bennett and R. Bennett, *Hitler's Admirals* (Annapolis: Naval Institute Press, 2004), 34.

¹¹Rader, 188.

¹²Bekker, 38.

¹³Raeder 273.

¹⁴Ibid, 281.

¹⁵Bennet, 55.

The two modern battleships, *Scharnhorst* and *Gneisenau*, weighed in at a displacement of 31,850 tons, but were more battle cruiser than battleship.¹⁶ In the great compromise of speed, armor, and firepower, the *Scharnhorst* and *Gneisenau* sacrificed firepower. They mounted nine 11-inch guns, and while plans existed to upgrade them to six 15-inch guns, such plans never came to light.¹⁷ On several occasions, both German ships were run off by a single British capital ship that mounted 15-inch guns. Furthermore, had the Germans refitted the two ship, each would have had the same number and size of guns as the two British battle cruisers.

The so-called “Pocket Battleships” were also not as powerful as their name suggested they were. Their size limited them to being powerful heavy cruisers. At 10,000 tons they were the same size as a “Washington cruiser,” but carried larger guns.¹⁸ Indeed those were the only ships they were good at fighting. Naval expert Anthony Preston said, “they were very expensive, over-gunned heavy cruisers, with only a moderate turn of speed, and a light-cruiser scale of protection.”¹⁹

But the core of German naval plans lay in what was under construction. Due to be completed in 1941 were the two battleships *Bismarck* and *Tirpitz*. Despite the fearsome reputation they would achieve in World War Two, the two ships were not actually the super ships imagined. The *Bismarcks* were based on the design of the last German battleship, the *Bayern* class.²⁰ The line

¹⁶Battle cruisers were traditionally ships the size of battleships but sacrificing either guns or armor in favor of cruiser-like speeds. Bekker, 33.

¹⁷Ibid.

¹⁸The Washington Naval Treaty of 1922 had specified the upper tonnage limit for a “heavy” cruiser to be 10,000 tons and to carry 8-inch guns. The Pocket Battleships carried 11-inch guns thus outclassing the existing heavy cruisers. Anthony Preston, *The World's Worst Warships* (Annapolis: Naval Institute Press, 2002), 112-116.

¹⁹Ibid, 122.

²⁰Ibid, 148.

drawings below, although not to scale, show the similarity. Amongst the visual similarities are the low placement of the guns, stern structure, and aft mast. Unfortunately, twenty-two years of naval experience left the *Bismarcks* with an armored core (citadel) that was far too low to protect the fighting ability of the ship, and a fire control system that was too confusing and disorganized to be very effective.²¹

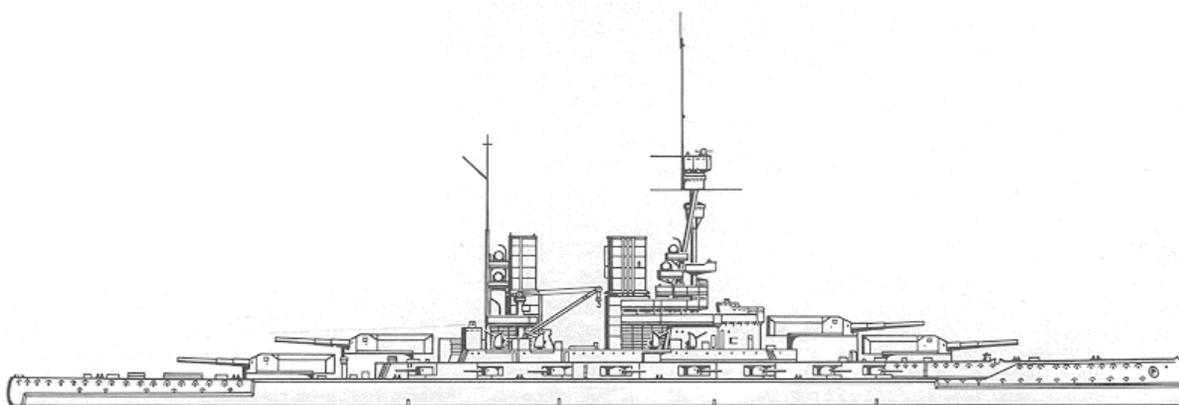


Fig. 1. Line Drawing of the *Bayern*-Class Battleship. From http://german-navy.tripod.com/sms_bb_bayern.htm, accessed 29 September 2006.

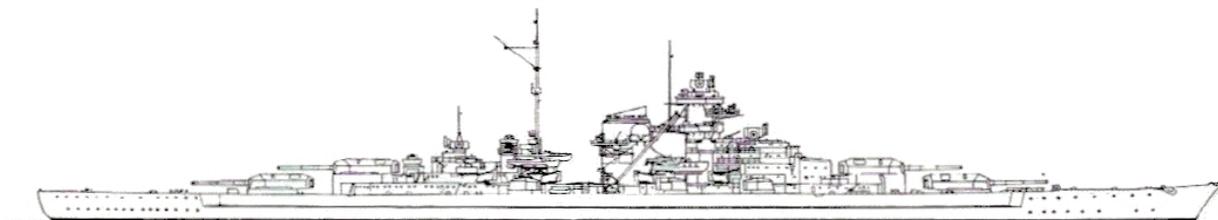


Fig. 2. Line Drawing of the *Bismarck*-Class Battleship. From Cajus Bekker, *The German Navy: 1939-1945*, First American ed. (New York: The Dial Press, 1974), 91.

In addition to those battleships, the Z-Plan called for six more battleships, three battle cruisers, and a host of smaller ships. The battleships, called the H-Class, were to have weighed in at 56,000 tons, making them slightly larger than the *Bismarcks* as well as all other European battle-

²¹A low armored citadel will leave the core very well protected, but will not cover the superstructure, which is where most of the fire control systems are. *Ibid*, 151-152.

ships, and would have carried eight 16-inch guns.²² They would have been capable of speeds around twenty-nine knots, which would have been more than sufficient for running down convoys and the older British battleships.²³ Nevertheless, the most grievous weakness of the *Bismarcks*, their obsolete armor pattern, would have been replicated in the H-Class.²⁴ As the diagram below shows, the H-Class was very similar to the *Bismarck*, visually differing by being longer and carrying a second funnel.

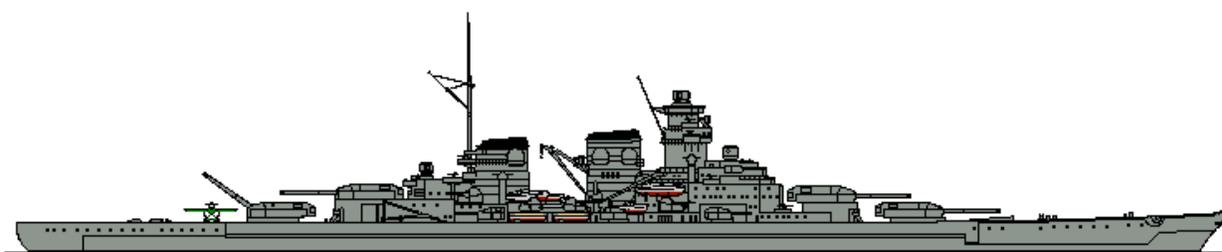


Fig. 3. Line Drawing of the H-Class Battleship. From <http://www.german-navy.de/kriegsmarine/zplan/battleships/schlachtschiffh/index.html>, accessed 29 September 2006.

The last major capital ship design planned for the Germans was a new battle cruiser design, the O-Class. These were to be replacements for, or depending on the source, complements to, the old “pocket battleships.” While they would have been very close to the *Scharnhorsts* in size, approximately 32,000 tons, and armed with the same number and caliber of guns (after the *Scharnhorsts*’ refit), they would have been faster at thirty-four knots.²⁵ They would also have been much more vulnerable to enemy fire. Whereas the *Scharnhorsts* were armored like a battleship, the O-Class would have been armored like the pocket battleships they were to replace,

²²Peter C. Smith, *The Great Ships Pass: British Battleships at War, 1939-1945* (Annapolis: Naval Institute Press, 1977), 59.

²³Ibid.

²⁴Richard Worth, *Fleets of World War II* (Cambridge, MA.: Da Capo Press, 2002), 49.

²⁵ Smith, 59.

hence the clean lines, as seen in Figure 4, and the high speeds they would have attained.²⁶ Therefore, they would have been unable to attack a convoy escorted by a battleship, even one of the older British battleships.

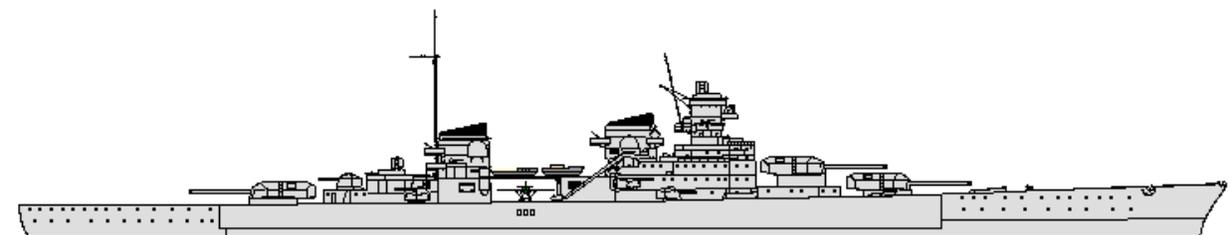


Fig. 4. Line Drawing of the O-Class Battle Cruiser. From <http://www.german-navy.de/kriegsmarine/zplan/battlecruisers/schlachtkreuzero/index.html> accessed 29 September 2006.

The last major ship design for the Kriegsmarine was not a capital ship but was instead an aircraft carrier. The Z-plan called for two carriers. The lead ship, *Graf Zeppelin*, had already been launched by the time war broke out.²⁷ It was a 23,200 ton ship—about average size.²⁸ It would have carried forty-two aircraft at a top speed of thirty-four knots all while being well armored.²⁹ It would have been an effective carrier, had it not been ruined by Hermann Goering's infamous decree of "Everything that flies belongs to me." The Kriegsmarine never developed naval aircraft that could work off a carrier. None of the Luftwaffe aircraft considered, the BF-109, FW-190, Fi-167, and Ju-87 were ever assigned to the carrier. The BF-109 and FW-190, while both excellent fighters, had terrible cockpit visibility and even worse undercarriages (the BF-109 was notorious for the number of crashes at paved airports, a moving flight deck would have been a disaster waiting to happen), and only the BF-109 could take the rigors of repeated carrier land-

²⁶Richard Worth, . *Fleets of World War II* (Cambridge, MA.: Da Capo Press, 2002), 49-50.

²⁷Bekker, 38.

²⁸Worth, 43.

²⁹Ibid.

ings, an advantage negated by its terribly short range.³⁰ The Fi-167 was a biplane, albeit a good one, and was axed as a result in favor of the proven Ju-87 Stuka, which quickly came to be the sole attack aircraft.³¹ Even had both carriers been completed and air groups assigned, they would have been at an extreme disadvantage to the British carriers.

Nevertheless, the Z-Plan was a formidable fleet that could have challenged British naval power. However, that assumes that the British sat on their hands and let their 1939 fleet be their fleet of 1945. Such was not to be the case.

Although Britain had fifteen capital ships in 1939, numbers do not tell the whole story. Historian Charles Owen said of the British fleet:

The primary element of British naval power was still the battle fleet; and the fifteen battleships and battle-cruisers forming it, all but two of them of First World War vintage, although largely modernised, were in essence what Fisher and Jellicoe had introduced . . .³²

That certainly does not paint a rosy picture of the Royal Navy. The situation only got worse when the modernizations are considered closely. In the late thirties, four of the of vintage capital ships (*Queen Elizabeth*, *Valiant*, *Warspite*, and *Renown*) were rebuilt, which involved receiving new engines, a completely new superstructure, and the addition of new secondary and anti-aircraft weapons.³³ Noticeably missing from that list is armor. Without better protection all the other upgrades amounted to a colossal whitewash of the inherent flaws of twenty year old designs. Furthermore, the remaining nine vintage warships received very little in the way of refits

³⁰The BF-109 had a range of only 410 miles, which meant that all attacks it escorted had to be within an absolute maximum of 205 miles, subtracting from that any time spent over the target protecting the bombers. Ibid.

³¹Ibid.

³²Smith, 63.

³³ Ibid, 32-33.

or upgrades, leaving them, for all practical purposes, the same ships they were in 1919. To be fair most of the other ships were scheduled to receive refits. The outbreak of war, though, intervened to prevent them, with fatal consequences for the *Barham*, *Hood* and *Repulse*.³⁴

Britain, was not ignorant to the weaknesses of their ships. Even though they had that knowledge, it was not until 1937 that Britain began to build new ships. Furthermore, Britain felt constrained by the 1935 Washington Naval Treaty, even though no other nations were bound by it anymore.³⁵ It is not surprising then that the *King George V*-class was considered to be a failure. Compared to equivalent American designs, the ten 14-inch guns (themselves a decrease in size from previous British capital ships) could throw only 7.1 tons of shells compared to 8.4 tons from the nine 16-inch guns of the Americans.³⁶ In an age where ship size, gun size, and quality of protection were all *increasing*, a *decrease* in firepower was a bad start to the ships. Furthermore, they were slower than all the German ships from the *Scharnhorsts* on and proved to be terrible seaboats. Nevertheless, the five ships would have served as suitable replacements for the “R” class.³⁷ The “R” class had been designed as a cheap follow up to the *Queen Elizabeths*, and as a result of cost saving measures, proved incapable of being upgraded.³⁸ Thus by 1941 they were old, slow, under-gunned, under-protected, and capable only of guarding slow convoys where their 15-inch guns would deter the German “pocket battleships” and *Scharnhorsts*.

³⁴All three ships were sunk by damage that would have been mitigated, at least to some degree, by the proposed refits. While their losses would likely not have been prevented by the refits, they would have slowed their sinking down, allowing for greater crew survival.

³⁵*Ibid*, 46-49.

³⁶*Ibid*.

³⁷They are commonly referred to as the “Royal Sovereigns” but claims have been made that they were actually the “Revenge” class. “R” class will be used for simplicity’s sake.

³⁸Worth, 91.

Britain was aware of the deficiencies and the other capital ship design the British had in the works, the *Lion* class, would have been a huge step forward. Outwardly very similar to the *KGVs*, as Figure 5 shows, the *Lions* would have weighed in at 40,000 tons and, while keeping the three turret arrangement, carried nine 16-inch guns in a more traditional triple arrangement.³⁹

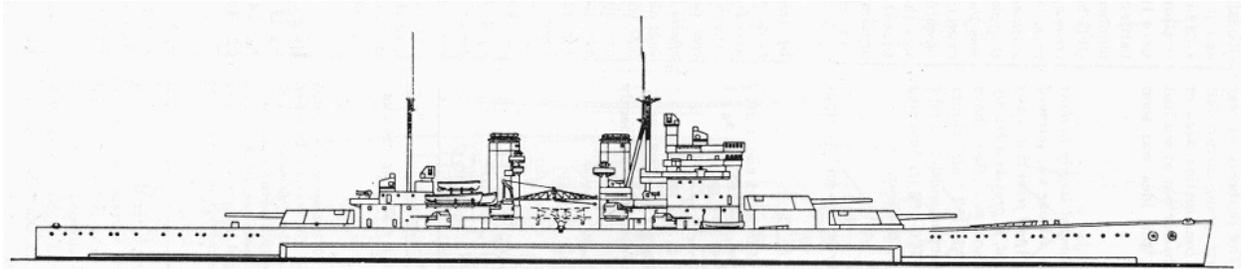


Fig. 5. Line Drawing of the *Lion*-Class Battleship. From Roger Chesneau, ed., *Conway's All The World's Fighting Ships: 1922-1946* (Annapolis, Naval Institute Press, 1980), 15-16.

HMS Lion and her three sisters would easily have handled the *Bismarck* and *Tirpitz*, and as the chart following shows, would also have been more than a match for the H-class. Furthermore, as the *KGVs* would likely have replaced the “R” class, the *Lions* were likely to have replaced some, if not all, of the *Queen Elizabeths*. Thus by 1944, the year the Z-plan was to finish, the last of the *Lions* should have come into service as well.⁴⁰ That concludes the plans Britain had for revamping their battle line. Germany seems to have had the better plan but unlike the Germans the British took another aspect of naval power very seriously.

Table 2. A Comparison of the British and German Flagship Designs.

	HMS Lion	H-class
Tonnage	40,000	56,200
Main Armament	9 16-inch guns	8 16-inch guns

³⁹Smith, 54.

⁴⁰British battleships by this point took approximately four years to build from authorization to commission. The first two *Lions* were started in 1939 and the latter two in 1940, yielding a completion date somewhere around 1944. *Ibid*, 446.

	HMS Lion	H-class
Secondary Armament	16 5.25-inch guns	12 5.9-inch guns, 16 4.1-inch guns
Armor	16 inch main belt, 6-inch upper deck	12 3/4 inch main belt, 2-inch upper deck, 4-inch main deck
Top Speed	30 knots	29 knots

Source: Peter C. Smith, *The Great Ships Pass: British Battleships at War, 1939-1945* (Annapolis: Naval Institute Press, 1977), 54-59.

That other aspect was naval air power. Britain had been at the forefront of naval aviation, but the creation of the Royal Air Force after World War One led to a situation not unlike that in Germany. The Royal Navy and Air Force did not agree on aircraft. This led to the navy getting aircraft well behind the times. Nevertheless, the Royal Navy recognized the benefit of carriers and had several in service during the 1920s and 1930s. In 1936 the Royal Navy decided to expand its carrier fleet in response to the remilitarization of Germany and Italy.⁴¹

There was one carrier already under construction, the soon to be famous *Ark-Royal*, but she was an experiment.⁴² The 1936 authorization provided for six carriers, the *Illustrious* class based off of the *Ark Royal*. They were slightly smaller, but utilized the armored hangar concept and as a result would prove extremely tough.⁴³ All six were laid down between 1937 and 1939 with the last two, *Indefatigable* and *Implacable*, being completed in 1944.⁴⁴

⁴¹Preston, 153.

⁴²Chris Bishop and Christopher Chanat, *Aircraft Carriers: The World's Greatest Naval Vessels and Their Aircraft* (St. Paul, MN: Motorbooks International, 2004), 45.

⁴³An armored hangar consisted of just that, adding several inches of armor around the hangar. It provided substantial protection over an unarmored hangar (as seen on American carriers) but greatly reduced the amount of hangar space available for aircraft. Ibid.

⁴⁴David Miller, *The Illustrated Directory of Warships* (St. Paul, MN: Motorbooks International, 2001), 42.

As a result of the armor, their airgroups were much smaller than comparable American designs. British airgroups were usually around the mid-fifties.⁴⁵ Even so, this was still more than the forty-two the German carriers would have carried. Thus, between the six *Illustrious* class carriers, the *Ark Royal* and the five existing British carriers, the Royal Navy would have had full command of the air even had the German carriers been completed.

Thus were the plans of both navies to combat each other. Clearly, 1944 was the expected year that both navies foresaw war with each other. Comparing the two navies hypothetical strengths is the first step to answering which plan, and which navy as a result, would have been better prepared for war, and Table 3 shows the strengths.

Table 3. The Hypothetical Naval Strengths of Britain and Germany in 1944

	British	German
Battleships	14	8
Battle Cruisers	3	5
Carriers	12	2

Notes: Some extrapolations were made. For example the “R” class was assumed to have been withdrawn from service as the *KGVs* commissioned. Likewise, the two unmodernized *Queen Elizabeths* were also withdrawn. For the Germans, the *Scharnhorsts* are considered battle cruisers for the reasons mentioned earlier in the text.

As the chart reveals, the British would still have had a commanding lead in numbers of battleships, and more importantly, in carrier strength. The German battle cruiser advantage would have been negated by the poor armor of their battle cruisers and the overwhelming British battleship strength. If carriers had entered the battle, the Germans would have faced a slaughter.

Numbers alone do not tell the whole story. A more in-depth comparison is required. The most basic comparison is to just put the fleets head to head in a sort of Jutland Two. In this situa-

⁴⁵ *Ibid*; Preston, 155.

tion the Royal Navy not only outnumbered the Germans seventeen to thirteen, but they also outnumbered them in large guns by a greater margin: 169 to 94. Furthermore, battle cruiser losses, which would occur first due to their weaker armor, would affect the Germans more in both raw numbers and proportionally. German accuracy, however, was better. The battle between the *Scharnhorst* and *Gneisenau* against the *Renown* off of Lofoten on April 9, 1940 was typical. The two German ships fired off a combined total of 249 11-inch shells and hit twice for an accuracy rate of .08 percent.⁴⁶ *Renown*, though, fired off 230 15-inch shells and landed only a single hit.⁴⁷ Furthermore, German radar in 1940 was the envy of the world.⁴⁸ However, Germany did not continue to develop its radar. As a result, by late 1941 Britain overtook Germany in the effectiveness of their naval radar. The loss of the *Scharnhorst* in 1943 can well be attributed to accurate, radar-directed gunfire from the *Duke of York*.⁴⁹ Thus, in any standup fight in 1944 the British could well be expected to land a higher percentage of shells than the Germans. Coupled with the raw number of shells, and the obsolete armor patterns of the German capital ships, those factors translate into a decisive edge for the British.

However, German naval strategy did not call for a revisiting of Jutland. Instead, the Kriegsmarine plan was to fill the North Atlantic with their ships. The battle cruisers and light cruisers would roam and attack lightly defended convoys while the battleships stayed as support.⁵⁰ Any British battleships protecting convoys from the battle cruisers would be overwhelmed by the

⁴⁶Vincent P. O'Hara, *The German Fleet at War: 1939-1945* (Annapolis: Naval Institute Press, 2004), 26.

⁴⁷Ibid.

⁴⁸Radar is essential tool at sea. It expands the range of finding ships and enables precise range-finding of shells, thus increasing the proportion of shots that hit the enemy. Worth, 42.

⁴⁹ O'Hara, 165.

⁵⁰ Raeder, 273.

Germans concentrating their super battleships on it.⁵¹ Unfortunately for the Kriegsmarine, this 1939 plan did not account for the realities of 1944. The old British battleships it expected to be able to overwhelm would by then have been replaced with ships that would not have been sunk so easily. Furthermore, there would have been a British carrier for almost every German capital ship, and while British assets would have been spread around the globe, one carrier versus one battleship at ranges over twenty miles results in a dead battleship. Even a few carriers in the North Atlantic would have ensured that anytime a German surface ship reared its head, there were carrier planes in range. Thus Germany would have lost even on the strategy it proposed.

The final possible battle would have been a carrier battle. Even with equal numbers, the Germans were unlikely to win. British carriers were renowned for their durability.⁵² Furthermore, given the short range of the ME-109 it is doubtful whether it could have provided adequate cover for the JU-87s against the British defending fighters. That weakness of short range fighters was visibly demonstrated by the slaughter of Luftwaffe bombers over England in 1940. Furthermore, the primary British fighter was an adaptation of the Spitfire to naval service, the Seafire.⁵³ Its success against greater numbers of ME-109s over England would not bode well for German carrier combat.

In all three possible battles the Germans would have needed massive amounts of luck to overcome the problems their fleet would have faced in direct combat against the Royal Navy. It is therefore clear that the Z-Plan was merely a glorified attempt to bring back the High Seas Fleet

⁵¹Ibid.

⁵²The *Indomitable* would shrug off two 1,100lb bombs and the *Indefatigable* was hit by a kamikaze carrying a 500lb bomb which caused no damage to her flight deck. Miller, 43.

⁵³ Preston, 155.

and to reinvent the “Risk Theory” of Tirpitz. Unfortunately for the Kriegsmarine, Risk Theory had been sent to the bottom with the High Seas Fleet in Scapa Flow.⁵⁴ Simply put, the Z-Plan would have been a failure while the British naval buildup would have accomplished everything it set out to do. During World War II the Kriegsmarine would nearly bring Britain to its knees, but it was not the roar and thunder of a surface fleet, it was the silent death of the U-Boat, a weapon that the Kriegsmarine did not have ready in sufficient numbers for World War Two. Even when directly challenged Britain could rest easy remembering the old poem, “Rule, Britannia, rule the waves; / Britons never will be slaves.”⁵⁵ And against the Z-Plan Kriegsmarine, Britain would rule the waves.

⁵⁴The crew of the High Seas Fleet had scuttled their ships in 1919 at the British naval anchorage in Scapa Flow rather than turn their ships over to the allied powers. Raeder, 104-105.

⁵⁵James Thompson, “Rule Britannia,” 2.1-2.

Bibliography

- Bekker, Cajus. *The German Navy: 1939-1945*. First American ed. New York: The Dial Press, 1974.
- Bennett, G.H. and R. Bennett. *Hitler's Admirals*. Annapolis: Naval Institute Press, 2004.
- Bergerud, Eric. *Fire in the Sky: The Air War in the South Pacific*. Boulder, CO.: Westview Press, 2000.
- Bishop, Chris and Christopher Chanat. *Aircraft Carriers: The World's Greatest Naval Vessels and Their Aircraft*. St. Paul, MN: Motorbooks International, 2004.
- Brown, David K. *Nelson to Vanguard: Warship Design 1923-1945*. Annapolis: Naval Institute Press, 2000.
- Chesneau, Roger, ed. *Conway's All The World's Fighting Ships: 1922-1946*. Annapolis, Naval Institute Press, 1980.
- Dinardo, R. L. . *Germany's Panzer Arm*. Westport, CT: Greenwood Press, 1997.
- Emmerich, Michael. Z-Plan [Internet]. Available from <http://www.german-navy.de/kriegsmarine/zplan/battleships/index.html>. Accessed 19 September 2006.
- Feuchtwanger, Edgar. *Imperial Germany: 1850-1918*. London: Routledge, 2001.
- Grove, Eric, ed. *German Capital Ships and Raiders in World War II*, vol. 1, *From Graf Spee to Bismarck, 1939-1941*. London: Routledge, 2002.
- Hansen, Kenneth P. "Raeder vs. Wegner: Conflict in German Naval Strategy." *Naval War College Review* 58, no. 4 (Autumn 2005).
- Koop, Gerhard and Klaus-Peter Schmolke. *German Light Cruisers of World War II*. Translated by Geoffrey Books. Annapolis: Naval Institute Press, 2002.
- Lambi, Ivo. *The Navy and German Power Politics, 1862-1914*. Boston: Allen & Unwin, 1984.
- Maiolo, Joseph. *The Royal Navy and Nazi Germany, 1933-39*. Houndmills, England: Palgrave, 1998.
- Mahan, Alfred. *The Influence of Sea Power Upon History: 1660-1783*. Boston: Little, Brown, and Compnay, 1898.
- Malmann-Showell, Jak P. *German Navy in World War Two: A Reference Guide to the Kriegsmarine, 1935 - 1945*. Annapolis: Naval Institute Press, 1979.
- Miller, David. *The Illustrated Directory of Warships*. St. Paul, MN: Motorbooks International, 2001.
- O'Hara, Vincent P. *The German Fleet at War: 1939-1945*. Annapolis: Naval Institute Press, 2004.
- Preston, Anthony. *The World's Worst Warships*. Annapolis: Naval Institute Press, 2002.
- Raeder, Erich. *My Life*. Translated by Henry W. Drexel. Annapolis: Naval Institute Press, 1960.
- Smith, Peter C. *The Great Ships Pass: British Battleships at War, 1939-1945*. Annapolis: Naval Institute Press, 1977.
- Worth, Richard . *Fleets of World War II*. Cambridge, MA.: Da Capo Press, 2002.