A BRIEF HISTORY OF THE BATTLE OF SKAGERRAK, MAY 31-JUNE 1, 1916

By Mihály Krámli and László Kiss
Edited by Tony DiGiulian

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Preface

On the last day of May and the first day of June 1916, the largest naval battle of the First World War and one of the most important sea battles in history took place, the battle called Skagerrak in German literature and Jutland in Anglo-Saxon. In the last hundred years, a library of literature has been written about the battle, its antecedents and effects, especially on the British side. It can be said that there is no moment of the battle about which we do not know everything that can be learned from documents and recollections today.

This paper is not intended to compete with previously published works, but is instead aimed at briefly summarizing the British-German naval competition before the First World War, the most important operations in the North Sea and the Battle of Skagerrak. As an addendum, we are recounting previously little-known episodes of the battle's afterlife, not much mentioned in the literature.

The British-German fleet race

The naval arms race of the period before the First World War and the phenomenon called navalism began in 1889. As a result of the British "fleet panic" of 1888, which was one of a series of panics during this time, the British Parliament adopted the Naval Defense Act of 1889 which provided 20 million pounds over the next four years for the enlargement of the fleet. This Act first stated the "Two Powers Standard" policy. The principle of the two powers standard was that Britain had to have at least as many battleships as the next two largest naval powers combined, which at that time were France and Russia In addition to ensuring British supremacy, one of the goals of this policy was to deter potential adversaries from developing a large fleet, thereby ultimately limiting naval competition. As so many times throughout history, in the end this policy had the opposite effect; as it did not dampen, but instead significantly increased naval competition. This started with a series of negotiations between Britain's arch-rivals that saw the ratification of the Franco-Russian military agreement in January 1894 and an accompanying increase in the size of both nation's navies. This development led to Britain passing the Spencer Act of March, 1894, which provided for another increase of 30 million pounds to further expand the fleet over the next five years.

The days of absolute British maritime supremacy, unchallenged by serious rivals for a hundred years and known as the 'Pax Britannica', were numbered. In 1890, the book "The

Influence of Sea Power upon History 1660–1783" by American Captain Alfred Thayer Mahan was published, and this became a key document of the era. With the publication of this book, navalism, the great era of worldwide naval development fever, symbolically began and lasted until the First World War, and even, in the case of certain actors, until the Washington Conference of 1921-22. Mahan's book was published at the most appropriate moment, during the transformation of international power relations and the dramatic development of naval technology, so his ideas fell on fertile ground. The most important of his teachings is that the wars that decide the fate of the world are decided at sea, and you can only become a world power by having a strong fleet. In the following decade, powers that were previously considered marginal in the naval field embarked on a path of intensive fleet development: the United States, Japan and Germany. These new, economically strong maritime powers soon overtook France and Russia, which by the end of the first decade of the 20th century had slid back to 5th and 6th place in the international scale of naval ranking. Thus, two decades after its announcement, the principle of the "Two Powers Standard" became untenable due to the strengthening of these new maritime powers.

The most serious and at the same time the most dangerous of the challengers was the economically and militarily strongest power on the European continent, Germany, which had united in 1871 with the defeat of their largest enemy in the Franco-Prussian War. The history of German naval armaments and the British-German fleet competition is intertwined with the name of Admiral Alfred von Tirpitz. Tirpitz became the head of the Reichsmarineamt in 1897. Tirpitz had already sent to Emperor Wilhelm II his fleet development ideas. It was then that the emperor, who was already a fan of the navy, decided to develop Germany's naval power. The Emperor originally supported the more moderate plan of Admiral Friedrich von Hollmann, the director of the Imperial Maritime Office at the time. When this plan failed before the Reichstag in March 1896, Hollmann offered to resign. Tirpitz, who was then in the Far East, was called home and the emperor appointed him to replace Hollmann on June 6, 1897.

On June 15, 1897, Tirpitz presented a memorandum to the Emperor in which he named Britain as Germany's most dangerous enemy and stated that the development of the German navy should be directed against Great Britain. Due to the lack of the necessary bases, Tirpitz rejected cruiser warfare against merchant shipping, and instead advocated the construction of as many battleships as possible, which could be used to threaten Great Britain in the North Sea. Tirpitz carefully calculated a long-term program, which he wanted to implement in small steps. By 1920, he planned to build sixty battleships. He believed that with this fleet, Germany would

have a good chance of victory in the event of a British attack. Even if Britain was successful, the Germans would still be able to obtain concessions at the negotiating table. Based on Tirpitz's calculations, it seemed that the financial base to support the fleet's development was also secured, as he optimistically assumed that the economic boom of the end of the 19th century would continue unabated and that the size and price of battleships would remain roughly unchanged.[1]

On March 26, 1898, the Reichstag voted for the First Naval Law, which was preceded by serious preparatory propaganda work.[2] The law provided for the construction of 19 new battleships by 1905. Tirpitz's first fleet law was considered by his contemporaries, including the British, to be a sign of a much more active German colonial policy,[3] which meant that his real long-term intention of being able to defeat the British fleet remained hidden. Later, when there was already an open naval competition between the two powers, Tirpitz blamed German diplomats for the disclosure of his intentions.

In 1899, the Boer War broke out, and in January 1900, a British cruiser stopped and searched several German steamers, searching for war materials. The war and this incident created a suitable basis for the adoption of the Second Naval Law. This was adopted on June 20, 1900 and doubled the number of battleships to be built, from 19 to 38. According to the schedule, the last ship was to be completed by 1920. With its implementation, Germany emerged as the second most powerful maritime power in the world. The preamble of the law already hinted in a vague form that the real opponent was Great Britain, and also described Tirpitz's theory of risk (Risikogedanke). He believed that even if the German fleet was smaller than that of Britain, the British would not be able to concentrate its entire fleet on the North Sea, because it could not leave its colonies unprotected. If the British did concentrate, then this would expose the British Empire to such a risk that in a confrontation , even in the event of victory, it would be so weakened that it would not be able to maintain his superiority against a possible new enemy. Tirpitz recognized the danger that the British might make a preliminary strike on the German fleet[4] when its strength had not yet reached the required level. Tirpitz

[1] *Berghahn* 1995. p. 61.
[2] Tirpitz created the propaganda department within the Imperial Naval Office, successfully winning over many journalists, politicians, university professors and influential people such as Alfred Krupp and shipping magnate Albert Ballin to the cause of fleet development. He founded the German Fleet Association, which had 78,000 members in 1898. By 1914, this number had grown to 1.1 million.
[3] *Steinberg* 1965. p. 128.
[4] The English coined a special term for this (*Copenhagenization*), the origin of which dates back to 1807, when, in order to prevent the Danes from joining the French, a British fleet attacked and defeated the Danish fleet in front of Copenhagen. The British did the same to the French fleet at Mers el-Kebir in Algeria in 1940.

estimated that this dangerous period could last until 1905. After the British did not act as Tirpitz had planned, this period was repeatedly extended and even became practically infinite.

After the passage of the Second Naval Law, the British realized the true intentions of the Germans and soon saw Germany as their main enemy.[5] The British responded to the challenge in several ways. On a material level, the first response was an order for eight battleships of the KING EDWARD VII class. The special significance of this class was that in they were the first shift from standard battleships to increase firepower (4 x 30.5 cm and 10 x 15.2 cm but now with an addition of 4 x 23.4 cm guns). This was the first step forward in the dreadnought revolution that occurred a few years later, which finally brought a qualitative factor into fleet competition in addition to a quantitative one, and thus posed a serious threat to Tirpitz's plans.

The German naval armament program also encouraged the British to take steps in the defense of its empire, which the leadership and elite society would have found difficult to accept just a few years earlier: Great Britain came out of isolation and looked for allies. The first step was the conclusion of the 1902 British-Japanese treaty, which made it possible to return the battleships of the Far East fleet to Europe. The next step was the 1904 agreement with the arch-enemy, France, which enabled the long-term withdrawal of battleships from the Mediterranean and their concentration in the North Sea. Then in the Russo-Japanese War of 1904-1905, Russia's fleet was significantly weakened, while that of her Japanese ally was strengthened. This allowed Great Britain in 1907 to come to an agreement with Russia which effectively meant that Germany now had two potential enemies on her flanks. Finally, traditionally cool British relations with the United States were also normalized. Other effective responses by the British included the appointment of a decisive leader for the British Navy in the person of Admiral Sir John Arbuthnot "Jackie" Fisher (from 1909 Lord Fisher), who was appointed First Sea Lord on 20 October 1904.

Soon after his appointment, Fisher began a reorganization of the Royal Navy, the main goal of which was to concentrate the most modern units in the North Sea. Fisher decommissioned 154 obsolete units in order to focus costs and personnel on modern ships.[6] In 1902 the Home Fleet was established and in 1904 it was decided to establish a new northern fleet base. In the past, the most important British naval bases were located in southern England, near the ancient enemy, France. First Rosyth and then Invergordon were selected as new fleet

[5] *Steinberg* 1965, p. 140–147.
[6] In Fisher's words, he decommissioned ships that "could neither fight nor run away." Regarding the staff, he said: "We don't need officers who only hunt pheasants along some Chinese river."

bases located further north, but fortification work progressed slowly. Finally, Scapa Flow in the Orkney Islands was designated as the base of the Grand Fleet and this was established in August 1914.

The most sensitive issue of the relocation of the British fleet was the withdrawal of battleships from the Mediterranean. The Admiralty's war plans of 1907 and 1908 for the first time took into account the possibility that the Mediterranean Fleet would be sent home in the event of a war against Germany.[7] In February 1912, indirectly by the pressure of the increasingly strong Triple Alliance navies of Germany, Italy and Austria-Hungary, and directly by the failure of the Haldane mission,[8] there was a reorganization of the British navy and then the signing of the British-French naval agreement. Winston Churchill, the First Lord of the Admiralty appointed in October 1911, presented the basic elements of a new naval policy to the British House of Commons on March 18, 1912. The main principles of the new program became the maintenance of a 60% superiority over Germany and the end of the two powers standard. Churchill also proposed the complete withdrawal of heavy naval units from the Mediterranean. In the second half of 1912, an agreement was reached with France that, in the event of a war against Germany or the Triple Alliance, Great Britain would undertake the defense of France's Atlantic coast. In return, France would concentrate its entire fleet in the Mediterranean and undertake to protect British interests there.

Germany reacted to the British moves by supplementing the Second Naval Law by three minor laws, the so-called “novellas.” The first one was adopted by the Reichstag in June 1906, following the Moroccan crisis, which authorized the construction of six large cruisers (armored cruisers). The second was motivated by the fear of British encirclement and was adopted in April 1908. This second novella reduced the replacement time of battleships from 25 years to 20. The third novella was approved by the Reichstag in June 1912 after the Agadir crisis, which authorized the construction of three additional battleships in addition to the original program.

Several factors contributed to the failure of Tirpitz's plans. As we saw above, contrary to Tirpitz's preliminary expectations, Great Britain emerged from isolation and created a series of diplomatic solutions that allowed her to concentrate her battleships in domestic waters. The material foundations of the German fleet development were thoroughly shaken by the qualitative factor introduced by Sir John Fisher in addition to the quantitative one. As mentioned above,

[7] *Halpern* 1971. p. 5.
[8] In February 1912, Secretary of State for War Lord Haldane negotiated in Berlin to reduce the tension between the two powers. The Germans demanded a guarantee of unconditional British neutrality in return for giving up the acceleration of their naval armaments. After the British refused to do so, the negotiations failed.

according to Tirpitz's calculations, his long-term program could be reliably and predictably financed from excise taxes. However, for this to be successful, two conditions had to be fulfilled: the economy of the 1890s had to continue unabated and the dimensions and parameters of battleships had to remain roughly the same. In neither case did this happen. First, a recession occurred in the first years of the 20th century and secondly from 1905-1906 the British Navy came up with a series of innovations that brought about a drastic increase in both the price and the size of battleships. Due to the recession, the funding for the German fleet expansion was jeopardized, so a tax increase was required to maintain the German program. Most of this 1907 tax increase was charged to the "little people."[9] However, Great Britain was also forced to resort to this means of raising taxes to support their fleet expansion.

The naval innovations, led by Admiral Fisher, drove the fleet race into an upward spiral. The first and most significant step was the introduction of the dreadnought-type battleship, which was a ship with a uniform large-caliber armament. This type received its name from its first representative, HMS *Dreadnought*, which was completed at the end of 1906. The idea was not entirely new, but the British were the first to implement it. We now know that this did not come as a surprise to the Germans, as they were already planning for their own dreadnoughts in anticipation that the British were also planning this change. The most painful thing for the Germans was that they were forced to expand the Kaiser Wilhelm canal in Kiel for huge sums of money in order for the much larger dreadnoughts to pass through it. From this it can be understood that it was not a coincidence that Tirpitz had long insisted that the displacement of the German battleships should not be increased above 16,000 tons.[10] The enlargement of the canal was carried out between 1907 and 1914. Incidentally, Sir John Fisher had made the prediction that war between Great Britain and Germany would break out when the enlarged canal was opened, and he was not wrong.

The second major innovation were the battlecruisers, which began to be built in 1906, and this type was the true love of Fisher's heart. In contrast to the dreadnoughts, the British managed to surprise the Germans in this case, as they were able to make them believe that these ships were being built as armored cruisers with 23.4 cm guns, so it was not until later that they were discovered to be larger ships that were armed with 30.5 cm guns. The next step was the British caliber increase in 1909, when they switched from building capital ships with 30.5 cm

[9] *Berghahn* 1995. p. 62. 4/5^{ths} of the required amount was covered by raising the excise tax on products that brought joy to the common people, such as tobacco and beer.
[10] *Grießmer* 1999. pp. 19–36.

guns to building them with 34.3 cm guns. It was then that ship prices began to drastically rise, as larger guns required larger ships, and the increases did not stop here, but continued in 1912. In that year, the British introduced another new ship category, the fast battleship with a designed speed of 25 knots compared to the 21 knots of previous battleships, along with another increase in gun caliber (from 34.3 cm to 38.1 cm). The Germans responded to the British challenges with varying degrees of delay and differences. The German dreadnoughts, but especially the battlecruisers, far exceeded their British contemporaries in terms of survivability. The increase in caliber was carried out relatively late by the German navy, which was partly due to Tirpitz, who until 1910 insisted on his theory that close combat would occur in the North Sea, so a larger caliber than 30.5 cm was not necessary.[11] This can be attributed to the fact that the Germans were able to put into service only two battleships during the war with a caliber greater than 30.5 cm (38 cm) and these did not commission until after the Battle of Skagerrak. As for fast battleships, the Germans did not specifically start with this type, but their battlecruisers were very close to this category in terms of protection and the later ones in terms of gun caliber (35 cm vs. 34.3 cm). German battlecruisers with their thicker armor were actually in a category somewhere between the lightly armored British battlecruisers and the fast battleships.

In terms of numbers, the British-German fleet race finally developed as follows: by the end of 1914, the British had put 24 dreadnoughts and 10 battlecruisers into service, while the Germans had 17 dreadnoughts and 5 battlecruisers. This represented a British superiority of more than 1.5 times in terms of the combined number of dreadnought-type battleships and battlecruisers. During the war, the British naval superiority over the Germans continued to grow. The British commissioned a further 11 dreadnoughts and 5 battlecruisers, while the Germans commissioned 2 dreadnoughts and 2 battlecruisers. Taking the combined performance of the two powers into account, this resulted in a British superiority of almost double the number of German capital ships. At the time of the Battle of Skagerrak, the superiority of the British fleet had already significantly exceeded the level reached by the end of 1914. While the Germans managed to commission only one additional battlecruiser by May 1916, the British had commissioned 10 new battleships, 9 of which were already equipped with 38.1 cm guns.

[11] *Grießmer* 1999. pp. 108–110.

The situation in the North Sea August 1914 - May 1916

Following the outbreak of war, under the influence of the heightened British-German naval rivalry and the Japanese surprise attack on Port Arthur a decade earlier, many believed that a major naval battle would take place shortly. However, the world had to wait almost two years for this to occur. There were several reasons for this. By 1914, the Germans had essentially realized that they had lost the fleet race and the dangerous period predicted by Tirpitz to end in 1905 had actually continued even into 1914. At the same time, the development of technology, mines, torpedoes, submarines and long-range coastal defense artillery made the use of a traditional British close blockade practically impossible. Admiral Sir John Jellicoe, who had been appointed to head the Grand Fleet on August 4, 1914, summarized the most important tasks of the British Navy as follows: He considered that the maintenance of British shipping to be the first and foremost priority, since Great Britain, as an island, was not self-sufficient. The second main objective was to prevent enemy shipping. In third place, he indicated the provision of the transfer and supply of certain units of the army. Finally, the navy was tasked with preventing the invasion of Great Britain or one of its colonies. Jellicoe was of the opinion that these goals could be achieved most quickly by destroying the enemy's naval power.[12]

However, destroying the enemy, i.e., the German fleet, was not so easy, especially if it remained in well-protected ports, aware of its numerical disadvantage[13]. Under the given technical conditions, for the British to impose a close blockade would have amounted to suicide, so the British instead decided in favor of a distant blockade, the main purpose of which was to prevent the Germans from getting out of the North Sea into the seas of the world. The southern exit of the North Sea was guarded by the Channel Fleet and the northern exit by the Grand Fleet stationed at Scapa Flow.

The German planning had expected a British close blockade. Admiral Hugo von Pohl, the Chief of the Naval General Staff (Admiralstab), believed that the German fleet could not risk an attack on Scapa Flow with the given forces, and therefore considered the use of submarines and minelayers to be appropriate. In addition, he thought that the British would maintain some kind of blockade in front of Heligoland, and by eroding this, they could somewhat reduce British superiority. However, the Germans had no plan for what to do if the British stayed away.[14] By

[12] *Jellicoe* 1919. pp. 12–13.
[13] This is generally known as a “Fleet in Being” strategy where, just by existing and not fighting, a nation can require that the enemy keeps an equivalent fleet close by.
[14] *Halpern* 1994. p. 23.

the way, the war order issued to the German High Seas Fleet (Hochseeflotte) stated that they should not risk the fleet and only engage in battle in circumstances where victory seems likely. Since the British did not want to risk the Grand Fleet in the dangerous waters near Heligoland, it seemed that there would be little chance of a clash between the main forces unless by accident.

It is necessary to speak briefly about the changes in naval leadership on both sides. We have already mentioned above that in August 1914 Sir John Jellicoe became commander of the Grand Fleet. In October 1914, the first sea lord, Prince Louis of Battenberg, was forced to resign because of his German name. In his place, Churchill reactivated Lord Fisher, who had been retired in 1910, to the delight of his enemies. Both men fell into the failure suffered at Gallipoli in the spring of 1915 and were forced to resign their posts. The first Lord of the Admiralty became Arthur Balfour and the first Sea Lord Sir Henry Jackson. On the German side, after the outbreak of the war, Tirpitz's influence decreased, and he resigned in March 1916 after differing with the emperor over the submarine war. He was succeeded by Eduard von Capelle. The commander of the High Seas Fleet at the outbreak of war was Admiral Friedrich von Ingenohl. After the Battle of Dogger Bank in January 1915, the Emperor dismissed him for erroneously reporting that the British battlecruiser *Tiger* had been sunk and in February appointed Admiral Hugo von Pohl, who had previously served as Chief of the Naval Staff, in his place. Pohl was replaced as Chief of Staff by Vice Admiral Gustav Bachmann. However, Pohl was hospitalized with liver cancer in January 1916 and died the following month. In January 1916 Vice-Admiral Reinhard Scheer took command of the High Seas Fleet.

The nature of the war in the North Sea was different than had previously been imagined by both sides. In addition to the use of minelayers and submarines, this battlefield was characterized by small, quick skirmishes at the beginning of the war. We highlight one of the clashes, the most significant, where the heaviest units of the two sides faced each other and clashed for the first time:[15] This was the (first) Dogger Bank battle on January 24, 1915. After that, there were no further engagements between the heavy units until the Battle of Skagerrak.

The Germans noticed how accurate the British had information about the movements of the German fleet. Having no idea that the British had broken their naval codes and could read their radio messages,[16] they strongly suspected espionage. Vice-Admiral Franz Hipper, the

[15] On 16 December 1914, during the German attack on Scarborough, the German High Seas Fleet almost ran afoul of an inferior British force, but Ingenohl turned back early, fearing that he would face the entire Grand Fleet.
[16] The codebreaking organization of the Admiralty, founded in October 1914, was codenamed Room 40. The basis of their work was the acquired German code books and other secret documents. The most important of these were materials recovered from the cruiser MAGDEBURG, which ran aground off the coast of Estonia in August 1914.

commander of the German battlecruisers (Scouting Group I), believed that the fishing boats operating around the Dogger Bank, mainly sailing under the Dutch flag, were monitoring the movements of the Germans and reporting to the British. Hipper's plan was to clear Dogger Bank of fishing boats and British light units. After a German aircraft detected British activity on 19 January 1915, Ingenohl ordered Hipper to reconnoiter the Dogger Bank area on the 23rd. The British succeeded in intercepting and deciphering Ingenohl's instructions, and prepared an ambush for the next morning under the command of Vice Admiral Sir David Beatty with five battlecruisers against Hipper's forces.

Hipper's forces consisted of three battlecruisers (SEYDLITZ, DERFFLINGER, MOLTKE), one armored cruiser (BLÜCHER), four light cruisers and eighteen destroyers.[17] The British had five battlecruisers, three under the command of Beatty (LION, TIGER, PRINCESS ROYAL) and two under Rear Admiral Sir Archibald Moore (NEW ZEALAND, INDOMITABLE), as well as seven light cruisers and thirty-five destroyers.

The battle began in the early morning of January 24, with a clash between a British and a German cruiser. Beatty then proceeded on a south-easterly course and Hipper on a north-westerly course in the direction of the distant muzzle fires. From Hipper's cruiser reports and intercepted British radio messages, he concluded that there was a larger British force out at sea and that his ships were heading for a trap. Therefore, at 7:35 a.m., he shaped course to a south-easterly, homeward direction. At 7:50 a.m., the German battlecruisers were sighted from LION, Beatty's flagship. Beatty repeatedly gave instructions to increase speed, but despite the best efforts of stokers, the two older and slower battlecruisers led by Moore gradually fell behind Beatty's faster ships. Beatty's three battlecruisers gradually caught up behind the German force, which was moving slowly because of the armored cruiser BLÜCHER. Around 9:00, the LION opened fire from a range of 18 km, and the Germans were only able to return fire at 9:11, due to their shorter-ranged guns and the thick funnel smoke blocking the gunsights of the rear gun turrets.

The British concentrated their fire on SEYDLITZ in the lead and BLÜCHER in the rear. The decisive victory hoped for by the British was not achieved, largely due to incorrect or misinterpreted signals,[18] as well as LION being damaged. Beatty's intention was to use his three

[17] The Germans officially called these ships torpedo boats, but based on their size and armament, they are more accurately classed as destroyers.
[18] Beatty had chosen Ralph Seymour as his Flag Lieutenant in 1913, despite his lack of training for the job. A strong motivating factor in the decision may have been that Seymour's sister was an old friend of Churchill's wife. Seymour's faulty signals during the German attack on Scarborough, in the Battle of Dogger Bank and at Skagerrak

faster battlecruisers to catch up with the three German battlecruisers, while leaving the slower BLÜCHER to Moore's two battlecruisers. The TIGER misunderstood a signal and started firing at SEYDLITZ instead of at MOLTKE, but her fire was completely ineffective. At 9:43 a.m., one of LION's 34.3 cm shells hit the barbette of SEYDLITZ's rearmost gun turret. This shell did not completely penetrate the armor, but a piece of glowing metal ignited the charges in the ammunition handling room, and the fire spread to the rest of the turret. The turret crew tried to escape to the other turret, but the fire spread through the open hatch to the other turret, and the resulting fires killed the entire crew of both turrets with 159 people losing their lives. The explosion of the ship was prevented by flooding the ammunition magazines.[19] At 10:18, DERFFLINGER's 30.5 cm shells hit LION. The British battlecruiser was slowed down and had to be stopped as a result of these and more hits, as seawater had contaminated the boiler feed water due to damage to the condenser. At 10:40, the LION's bow gun turret was hit and the resulting fires threatened to penetrate down into the magazines, but the fire was put out in time and the ship was saved. Meanwhile, at 10:30 BLÜCHER was hit by PRINCESS ROYAL and the armored cruiser's speed was reduced to 17 knots.

At 10:54 a.m., believing that a U-boat had been sighted, Beatty ordered a 90-degree turn. At 11:02, realizing that this turn would open the range unnecessarily, Beatty ordered "Course NE" to limit the turn to 45°. At this same time, Beatty had wanted to give the battlecruisers ahead of him the signal "Attack the enemy's main force", but as this was not in the signal book, his signal officer instead gave the signal "Attack the enemy's rear" and flew both signals together. Unfortunately, this combination was misinterpreted by Adm. Moore to mean to "concentrate on BLÜCHER," which happened to be NE of him. As a result, his battlecruisers broke off from the pursuit of the main German body and started firing on BLÜCHER, which capsized and sank at around 11:45 a.m., with the loss of 792 of her crew. Beatty transferred from the immobilized LION to a destroyer and then transferred his flag to the PRINCESS ROYAL at 12:27 p.m. However, by then it was too late, as the Germans had managed to escape.

The returning Germans initially believed that they had succeeded in sinking a British battlecruiser, as a spectacular but not very dangerous fire broke out aboard the TIGER. After a few days the truth came out and it cost Ingenohl his post, who was replaced by von Pohl. Beatty

caused significant disadvantages to the British. As a result of post-war criticism, he suffered a nervous breakdown and committed suicide in 1922.

[19] Pumpmaster Wilhelm Heidkamp opened the red-hot valves by hand, saving the ship while suffering severe burns.

remained in place, while Moore was (somewhat unfairly) transferred to the Canary Islands. The Germans learned from the SEYDLITZ incident and improved ammunition handling practices, but not the protection of magazines and ammunition hoists.[20] The British didn't learn anything in this area, and even drew the wrong conclusion that the key to victory was in increasing the rate of fire, so they switched to even worse ammunition handling practices, which had tragic consequences at Skagerrak. In the battlecruiser-to-battlecruiser encounter, the Germans shot significantly better, scoring 22 hits against 7 British hits. The Germans knew that the appearance of the British battlecruisers was no accident, but they still had no idea that the British could decipher their radio traffic and strongly suspected espionage.

Naval strategy did not change significantly under von Pohl's command . He also did not wish to risk the German fleet in the waters close to the British coast. In the spring of 1915, although he sailed six times with the High Seas Fleet, he never strayed more than 200 kilometers from their home base. Pohl himself knew very well that the British would not appear near the German bases, especially not with a unit weaker than the German fleet, so it was futile to hope for such a thing. As he explained, one should not expect such "exceptional stupidity" from the British.[21] The fleet's inactivity was not good for morale, especially among the younger officers and Tirpitz's loyalists.

In January 1916, von Pohl was hospitalized and Vice-Admiral Reinhard Scheer took his place. At the beginning of February, Scheer and his associates, which included prominent people dissatisfied with the inactivity, prepared a new program that formulated a more active and aggressive strategy. The basis of the idea was to try to force the British, by means of submarine and mine warfare, shelling of coastal cities, and bombardment with zeppelins, to flee with part of their naval forces and to be forced to engage in battle under conditions favorable to the Germans.[22] Scheer ran out with the High Seas Fleet on 5-6 March while zeppelins bombarded Hull. The aim of the Germans was to destroy the British patrols, but because they broke the radio silence, the British learned of their presence in time, so the clash was avoided.

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[20] *Campbell* 1986. p. 374. Campbell says that only the ammunition handling regulations were changed to reduce the number of charges between the ammunition magazines and the guns and the flaps on the magazine scuttles were not flash tight. However, in his report to the Austro-Hungarian Navy, Fregattenkapitän Colloredo-Mannsfeld disputes this (*Krámli* 2024, p.28), saying that “after the battle of 24 January 15, the best humanly possible had been done to protect against this danger, the ammunition had been removed from the working chamber and, where possible, all openings in the shafts leading downwards had been fitted with flaps, covers and heavy asbestos mats, just as German ammunition is known to be particularly well stored and secured in cans with screwed-on lids.” This is also supported by *Staff* 2014, p. 164.

[21] *Halpern* 1994. p. 288.
[22] *Halpern* 1994. p. 310.

German battlecruisers shelled Lowestoft on 25 April, but the engagement with British forces was again missed. In the spring of 1916, the British also experimented with something similar: they wanted to lure out the German fleet by bombing the German airship bases, but this was also unsuccessful.

The Battle of Skagerrak

As we have seen, both sides tried to trap the other with quick strikes. The British hoped to catch the High Seas Fleet far from the German coast, while the Germans hoped to split up the British fleet and attack a weaker force. By May, Scheer had developed another plan: he wanted to lure the British out by shelling Sunderland. 18 submarines were dispatched near British bases with the aim of attacking any British warships that were coming out. They intended to observe the position of Jellicoe's Grand Fleet by deploying zeppelins to avoid an unwanted encounter with the British main force. The objective was again the usual: to lure Beatty's battlecruisers in front of Scheer's main forces. The action originally planned for mid-May had to be postponed, as condenser defects had been found in the latest German battleships, and the repair of the SEYDLITZ from mine damage was also delayed. By May 28, the weather had deteriorated, and gale-force winds made it impossible to deploy the zeppelins, so an alternative plan was devised. Instead of bombarding Sunderland, they intended to send the battlecruisers out to the Dogger Bank to attack the patrolling British forces, thus luring Beatty into a trap. With the wind not abating and the U-boat supplies lasting only until 1 June, on 30 May Scheer ordered the new plan to be implemented on 31 May. At one o'clock in the morning on this day, Hipper's battlecruisers went out, followed shortly afterwards by Scheer's battleships.

On the 28th, the British guessed from the German radio broadcasts that the German fleet was preparing for something, and this became a certainty with the order issued on the 30th of May. The Admiralty ordered Jellicoe to sea at 17:40 and the British fleet ran out at 22:30. The British main force under Jellicoe consisted of 24 battleships, 3 battlecruisers, 8 armored cruisers, 12 light cruisers and 52 destroyers. Beatty's reconnaissance force consisted of 6 battlecruisers, 4 QUEEN ELIZABETH-class fast battleships, 14 light cruisers, 27 destroyers and one seaplane tender. In total, the British forces counted 28 dreadnought-type battleships, 9 battlecruisers, 8 armored cruisers, 26 light cruisers, 79 destroyers and one seaplane tender. Jellicoe's flagship was the battleship IRON DUKE, Beatty's was the battlecruiser LION.

In opposition, Scheer's High Seas Fleet consisted of 16 dreadnoughts, 6 pre-dreadnoughts, 6 light cruisers and 31 destroyers. The reconnaissance force under Hipper's command consisted of 5 battlecruisers, 5 light cruisers and 30 destroyers. In total, the Germans had 16 dreadnoughts, 6 old pre-dreadnought battleships, 5 battlecruisers, 11 light cruisers and 61 destroyers. Scheer commanded his forces from the battleship FRIEDRICH DER GROßE, while Hipper's flag flew from the battlecruiser LÜTZOW.

The first contact between Beatty's and Hipper's forces was accidental. Although the two fleets were on a course approaching each other, the meeting would not have taken place until later. Hipper's advance guard of cruisers and destroyers had stopped a Danish steamer for inspection around 2 p.m. The steamer was also sighted by Beatty's cruisers and they headed towards it for a similar purpose when they spotted the Germans. The first shots of the battle were fired by the British cruiser GALATEA at 2:28 p.m., and the first hit was made by the German cruiser ELBING at GALATEA at 2:36 p.m. Twelve minutes into the battle, Beatty turned to the southeast and increased his speed to cut off the German route to their home bases. Due to signaling difficulties, Rear Admiral Hugh Evan-Thomas's four fast battleships, which were already slower than the battlecruisers, lagged about 10 miles behind Beatty's ships, which meant that they would be delayed in joining the fight against the German battlecruisers for half an hour.

The German battlecruisers were sighted by LION at 3:30 p.m., about 25 km away. At 15:45, Hipper turned southeast to lead the British battlecruisers in front of Scheer's main force 75 km to the southeast. This phase of the battle was later named "Run to the South." From a distance of 14 km, the Germans opened fire for the first time at 15:48. In this phase of the battle, the Germans were much better shooters than the British, helped by the light conditions and the wind, while the British were greatly disturbed by the smoke from their own ships. Within minutes, the Germans scored multiple hits on three of the six British battlecruisers. At 4:00 p.m., the British suffered their first serious injury: LION's Q turret was hit by a 30.5 cm shell and rendered useless. A quick order to flood the magazines saved the ship from destruction.[23] The first British disaster occurred within minutes of the LION hit. The battlecruiser INDEFATIGABLE was hit by at least four 28 cm shells from VON DER TANN's two salvos between 16:02 and 16:05. First, the magazine of Turret X exploded, and then, as a

[23] Marine Major Francis Harvey, the turret's commander, was mortally wounded by the hit, but with the last of his strength he ordered the magazines to be sealed and flooded. Half an hour later, the cordite charges inside the turret exploded, but the sealed and flooded magazines had saved the ship from destruction. Harvey was posthumously awarded Britain's highest honor, the Victoria Cross.

result of another hit, that of Turret A as well. The battlecruiser rapidly broke in two and sank, 1,017 people lost their lives, and only two survivors were rescued from the water. At the same time that LION was hit, QUEEN MARY hit the barbette of SEYDLITZ's rear, superimposed gun turret (Turret C), detonating four charges. This gun turret was burnt out, killing most of its crew, but now the fire did not spread to the other stern gun turret as it had at Dogger Bank.

Evan-Thomas' fast battleships finally joined the fray at 16:08 when BARHAM fired her first salvo at VON DER TANN. Within a few minutes, his other three battleships were within range. The British suffered their heaviest loss at 4:26 p.m.: Several shells from DERFFLINGER and possibly SEYDLITZ hit QUEEN MARY, exploding her forward magazine. Only nine of the British battlecruiser's crew of 1,275 survived.[24] At 16:30 both sides launched a torpedo attack with their destroyer flotillas, during which two British and two German destroyers were sunk. The Germans failed to score a torpedo hit on the British battlecruisers, while the British hit SEYDLITZ, which, however, was protected by its effective torpedo defense system and was able to maintain its speed. In this phase of the battle, the Germans had much better shooting than the British: their battlecruisers scored 42 hits, compared to 11 for the British battlecruisers and 6 for the fast battleships that had joined later.

Meanwhile, the British cruisers had signaled to Beatty and Jellicoe the appearance of the German High Seas Fleet. This came as a surprise to Jellicoe, as he had received information from the Admiralty at 12:30 that the German battleships had not run out. Beatty sighted the main German forces at 16:38 and ordered a 180° turn to the left. At 16:48, Evan-Thomas' battleships were ordered to turn right instead of left, creating a gap of five kilometers between the battlecruisers and the battleships. After the 180° turn, the next phase of the battle began, the "Run to the North". The roles were now reversed, with Beatty trailing Hipper and Scheer's forces in the direction of the Grand Fleet. As a result of the turn, the four British fast battleships came within range of the German battleships. For the next hour, Evan-Thomas's squadron, as Beatty's rearguard, fought both German battlecruisers and Scheer's battleships. Due to poor visibility, Beatty withdrew from the fight for a while after 5:10 p.m., then rejoined the fight before 6 p.m., under much more favorable visibility conditions. Because of the favorable conditions, the British scored more hits on Hipper's ships than the Germans did on the British during this phase of the battle.

[24] After the destruction of the QUEEN MARY, Beatty made his famous remark: “There seems to be something wrong with our bloody ships today.”

At 6 p.m., Jellicoe still knew nothing about the position of the main German forces due to a lack of signals from Beatty and his scouting cruisers. At 6:14 p.m., Beatty's flagship LION, now in sight of Jellicoe in IRON DUKE, sent by searchlight only the information that the enemy battleships were to the south-southwest. Jellicoe was faced with the dilemma of how to form a line of battle from his six columns of battleships: should he line up his ships after the northernmost or the southernmost column. Finally, he decided to form a line of battle behind the northernmost column and sail in a southeasterly direction. In the end, this turned out to be the right decision, so he was not only able to move perpendicularly to the German fleet, and thus had a chance to not only perform the classic naval maneuver of "crossing the T," but at the same time he was able to cut off the German fleet's way home.

At 16:05 Jellicoe ordered Rear-Admiral, The Honourable Horace Hood with his three battlecruisers and scouting forces to join Beatty. The cruiser CHESTER, belonging to Hood's scouting force, was the first to clash with the German cruisers, then the battlecruisers arrived to relieve her and disabled the German cruiser WIESBADEN at 17:56. This period, when many ships crowded into a small area and sought their position among the approaching fleets, was called by the British the "Windy Corner." The British suffered further heavy losses during this period. Vice-Admiral Sir Robert Arbuthnot wanted to finish off the WIESBADEN with his two armored cruisers, but in the thick smoke he did not notice that they were running straight into the guns of the German battleships and battlecruisers, which opened fire on them from 7-8 km. DEFENCE soon exploded and sank with her entire crew of 903, including Arbuthnot. The WARRIOR, shot to half a wreck, was rescued by the fast battleship WARSPITE. At 18:19, WARSPITE's steering gear got stuck while turning, and the ship made two complete circles around WARRIOR before it was repaired. The circling battleship attracted German fire, so the WARRIOR was able to escape. Unfortunately, the damaged armored cruiser had to be abandoned and sank the next morning.

At 18:20, Hood's battlecruisers opened fire on the German battlecruisers, which were also fired upon by Beatty's ships. The British scored several hits, especially on LÜTZOW. At 16:29, INVINCIBLE's gun turret Q was hit and her ammunition magazine exploded, quickly sinking the ship. Only six of the battlecruiser's crew of 1,032 survived, and Hood also lost his life. In the meantime, LÜTZOW's bow sank deeper and deeper into the water, and the battlecruiser was so damaged that Hipper was forced to transfer to the destroyer G39.

At 18:30, to Scheer's complete surprise, the British Grand Fleet, which the Germans thought was not out at sea, emerged from the fog and smoke. The British, in a tactically

advantageous position, opened fire, and within minutes Jellicoe's flagship, IRON DUKE, scored seven hits on the leading battleship KÖNIG. Sensing that they were headed for a death trap, Scheer ordered a simultaneous 180° turn to the right (Gefechtskehrtwendung nach Steuerbord) at 18:33, and with this skillfully executed maneuver, which the destroyers covered with a smoke screen, managed to get out of the British fire.

Jellicoe, fearing a possible German torpedo attack, did not directly pursue the German fleet, but first turned southeast and then south, with the aim of keeping the Germans to the west of him, thus preventing their return home. At 18:54 the British battleship MARLBOROUGH was hit by a torpedo (presumably from WIESBADEN) and her speed had to be reduced to 16 knots. A few minutes before 7:00 p.m., Scheer made another simultaneous turn with the aim of confusing the British and making it easier to escape later in the darkness. As a result of this turn, the German fleet again found itself facing the concentrated fire of the British fleet, and five German battleships were hit, while the Germans hit only the British COLOSSUS. At 7:15 p.m., Scheer again ordered a simultaneous 180° starboard turn while ordering the battlecruisers to attack as a diversion with the destroyers and cover the retreat of his main force. The execution of the turn was not now as orderly as before, but finally Scheer's forces withdrew from the fight westward in the fog.

With Hipper still on G39, the four remaining German battlecruisers led what was later called a "death ride" by Captain Johannes Hartog, commander of DERFFLINGER. In this short but desperate action, the German battlecruisers received another 37 hits while scoring only two. Despite the heavy hits, the German ships survived the action and achieved their goal: the German main forces successfully withdrew from the fight. At 7:45 p.m., Scheer decided to return home. However, he was hindered in this by the British fleet, which was located between him and the German home ports. On Jellicoe's instructions, Beatty and his remaining battlecruisers set out to search for the front of the German line of battle, and between 20:20 and 20:30 engaged briefly with the German battlecruisers. As dusk turned to darkness, there was another exchange of fire or two between the British and German battleships, and then the fight between the large units ended.

Jellicoe - who knew that the Germans were better at night fighting - decided to resume the battle at dawn. He moved south, thus trying to cut off the supposed escape route of the Germans, leaving cruisers and destroyers as a rear guard 8 kilometers behind his fleet. However, this allowed the Germans to cut through to the north of the British fleet. The British main force saw and heard the gunfire to the north for hours as the German main force cut

through the British cruisers and destroyers, and some British battleships even saw the passing German battleships directly. Nevertheless, this news did not reach Jellicoe, for several reasons. In some cases, they identified the Germans as one of their own ships, and in other cases they did not want to reveal their position by firing. Finally, there was also a reason rooted in the British mentality: the captains thought that what they saw, their commanders also saw, and then they would give the order to fire if they saw fit. It was partially thanks to this that the seriously injured SEYDLITZ was able to return home, as she was seen from several British battleships, but was not fired upon due to lack of orders.

During the night, several short, fierce skirmishes took place, in which both sides suffered further losses. The most serious loss of the British during the night was the armored cruiser BLACK PRINCE, which accidentally fell in with the German battleships, which quickly sank her with her entire crew. The British also lost five destroyers. The Germans lost the old pre-dreadnought battleship POMMERN, which was torpedoed by British destroyers, and its entire crew was also lost. Two more cruisers and a destroyer were sunk on the German side. At 1:45 a.m. on June 1, LÜTZOW, which proved to be unsalvageable, was abandoned by her crew and sunk by a torpedo.

During the night, Jellicoe would still have had a chance to cut off the Germans' way home if the signal received from the Admiralty about the German position at 23:15 had been taken seriously. Since there was also a completely contradictory report at this time, and the Admiralty indicated before the battle that the High Seas Fleet was not at sea,[25] Adm. Jellicoe did not take the signal seriously. By the time Jellicoe learned of the German fleet's position after 4 a.m. the next morning, it was too late. The British Commander-in-Chief therefore turned his ships back, combed the scene of the battle for damaged enemy ships, and then returned to their bases.

In this battle, the British had suffered far greater losses than the Germans: they lost three battlecruisers, three armored cruisers and eight destroyers, and 6,094 British sailors were killed. The Germans lost one new battlecruiser, one old pre-dreadnought battleship, 4 cruisers and five destroyers, and their death toll was 2,551. On June 2, the Germans issued a press release in

[25] The Germans had a practice of transferring the radio call sign of the commander-in-chief's flagship to a shore radio station whenever he put out to sea and the flagship then received a new call sign. Jealousy between Room 40 and the Admiralty led to the fact that when an Admiralty officer before the battle asked the men of Room 40 where the location of the German flagship's radio call sign ‘DK’ was, they correctly told him that it was in Wilhelmshaven. However, the officer asking was not interested in the further explanation, even though it would have revealed that the German fleet was not close to home. If Jellicoe had known this, he would have probably advanced at full speed, not at cruising speed, and would have met the German fleet an hour or two sooner.

which they assessed the battle as a major victory, announcing the sinking of a British battleship and three battlecruisers, while admitting only POMMERN and WIESBADEN as their own losses. The German press celebrated the battle as a huge victory. The British initially tried to keep the news quiet, and the Admiralty issued only a short statement on the evening of the 2nd. With nothing from the Admiralty to contradict the German boasting, the next day the British press reported a German victory. The public was shocked by the news that the long-awaited battle had not brought a British victory and was only calmed down somewhat when the Germans officially acknowledged the loss of LÜTZOW on the 7th.

The historical judgment of the battle and the question of the winner are still the subject of debates to this day. Looking at the loss data alone, the German victory may seem clear. In terms of the realization of the goals and the longer-term strategic consequences, the picture is much more nuanced. The fact that the main forces of the two sides clashed meant that the British intentions were fulfilled and the Germans ran into the British trap, not the British into the German trap. The fact that in the end the British failed to take advantage of the situation and the Germans managed to extricate themselves from the trap with relatively small losses had many reasons, from incompetence to technical problems and bad practices to lucky (or unlucky) coincidences. The British were extremely frustrated that, although the situation basically developed according to their ideas, the expected victory was not achieved, and in fact, they suffered greater losses than the Germans. Amidst the euphoria of victory, however, Scheer was aware that only luck, especially the poor quality of the British shells, saved the German fleet from more serious losses. He also knew that if the loss rates in future clashes continued like this, mathematically the German fleet would be reduced to zero earlier than the British one.[26]

According to certain opinions, the battle was strategically more of a British victory: the Germans retreated and the British remained masters of the area. As Balfour, the First Lord of the Admiralty, put it: "It is not customary for a victor to run away."[27] After that, the German fleet ran out into the North Sea only three more times during the war: on August 19, 1916, October 1916 and April 1918. In addition to these three unsuccessful actions, the Germans avoided a risky confrontation with the British fleet, and the activities of the German surface fleet were limited to the Baltic Sea. After the German action on August 19, which resulted in both

[26] Scheer's report to the Kaiser about the battle of Skagerrak as published in "Battle of Jutland, 30th May to 1st June, 1916. Official dispatches with appendixes." Admiralty, London (published date unknown) pp. 587-600. Scheer was wary of further similar engagements, even if it would mean the sinking of a QUEEN ELIZABETH-class battleship. Instead of deploying large surface units, he recommended bringing Britain to its economic knees through submarine warfare.
[27] *Kiss* 2011. p. 106.

sides losing ships only by submarine attacks, Jellicoe decided on September 13 that it was unsafe to continue operations south of the line of Horns Reef due to the danger from submarines and mines, and issued orders to avoid that area, except in certain cases such as a possible German invasion of Great Britain. For the Germans, on October 6, they decided to expand the submarine war, and in February 1917 they expected Britain to be brought to its knees by unrestricted submarine warfare. Against submarines attacking merchant ships, a completely different type of warfare was needed, in which the battleships and battlecruisers of the Grand Fleet and the High Seas Fleet did not play the main role.

The Austro-Hungarian and German Partnership

The partnership and relations between the Imperial German and Austro-Hungarian navies date back to 1871, when the former was founded. Relations have become closer and more intense since 1900, the first naval agreement of the tripartite alliance.[28] The flow of naval information between the two powers, especially from the Tirpitz era onwards, was quite asymmetric. All this, of course, stemmed from the larger size and much more generous financing of the German fleet, as well as the much more advanced German industry and technology. The asymmetry, especially in the technological field, meant that relevant information flowed from Germany to the Monarchy, the Austro-Hungarian navy turned to the great ally ahead of them in technology and experience on many issues, while the reverse case occurred relatively rarely.[29] In the field of German-Austrian-Hungarian naval relations, in some cases the parties (primarily the German side) handed over confidential information to each other in a rare way even among allies, while in other cases they kept secrets from each other. Based on this, it is not possible to make clear statements about the nature of the naval relations and partnership between the two powers, as it showed a varied picture depending on the topic and period.

The period before 1914 took place on April 29-30, 1909. On April 17, 1909, the Austro-Hungarian Navy requested permission to see the latest German battleship designs. The permit

[28] See *Schiel* 2014 for a comprehensive report on the relationships.
[29] Among the topics on which the German Navy turned to Austria-Hungary for information, the case of the triple gun turrets is the most significant. The Germans were keenly interested in the triple gun turrets used on the first Austro-Hungarian dreadnought class, and in July 1913 they organized a special study trip to examine it. *Schiel* 2014. 203–205. He. The fire control devices of the Austrian company Petravić also belonged to this group.

was issued personally by the German Emperor William II. Fregattenkapitän Alfred von Koudelka, secretary of naval commander Rudolf von Montecuccoli, traveled to Berlin, to whom Tirpitz personally told the most confidential experimental results.[30] In this case, the German side handed over to the Austro-Hungarian navy the most confidential experimental results obtained with considerable financial and time expenditure, it is a different matter that they used very little of it. Because of the latter, it is no coincidence that even in the fall of 1913, Tirpitz strongly criticized the construction defects and poor survivability of the first Austro-Hungarian dreadnoughts (TEGETTHOFF class).[31] Among the Austro-Hungarian naval study trips in Germany, the artillery study trip in 1912 and the study of Föttinger's hydraulic speed reducer in 1913 and 1914 should also be mentioned.[32]

After the outbreak of the First World War, the relations between the German and Austro-Hungarian navies naturally entered a new dimension. With the declaration of Italy's neutrality, the Italian-Austrian-Hungarian-German naval agreement signed in 1913 became invalid, and the units of the German Mittelmeerdivision (battlecruiser GOEBEN and light cruiser BRESLAU) and who, instead of joining the Austro-Hungarian Navy, sailed to the Dardanelles. In this situation, especially from 1915 onwards, with German submarines operating from Austro-Hungarian bases, submarine warfare in the Mediterranean became the most important area of cooperation. We have a certain degree of knowledge about certain elements of the German and Austro-Hungarian naval relations and cooperation during the war, but the systematic exploration of these relations is still the task of future research.

In regards to the Skagerrak battle, at least as far as the design of future battleships was concerned, work on these ships continued in Germany until the beginning of 1917. The Germans, who were greatly impressed by the British 38.1 cm cannon, decided to arm their new ships with 42 cm caliber cannons, which, when fired with a maximum barrel elevation angle of 30°, would have achieved a much greater range than the previous 38 cm cannons that armed the *Baden* class (the name ship of which had a maximum gun elevation of 16°). Following the trail of British fast battleships of the *Queen Elizabeth* class, these battleships had a design speed of 26 knots. The barbettes and gun turrets, especially the roofs of the latter, would have received much thicker armor than was used on the existing ships, and this also followed from the analysis of the damage caused by the hits received during the battle. Another result of the analysis of the

[30] For more information, see *Krámli* 2010/1 (link).
[31] *Schiel* 2014. p. 161.
[32] *Schiel* 2014 p. 205., 191–192. and the Archive of the Hungarian Museum of Technology and Transport (MMKMA) Mladiata Collection p. 21 "Bericht zum Föttinger-Anlage" [Report on the Föttinger plant].

battle is particularly indicated by the planned 20-40 mm armoring of the foredeck, as the bows of several German ships had been flooded due to hits in this area, which also led to the loss of LÜTZOW. The construction of these ships, temporarily called the L 20 class, was planned to begin in 1918, but due to the priority of submarine construction, this plan was canceled.[33]

The review of the Battle of Skagerrak also caused a hiatus of more than half a year in new Austro-Hungarian battleship design (which was an unrealistic plan in any case), but was started again in March 1917. In 1917, two alternative battleship designs were prepared, one of 30,000 tons with 38 cm guns and one of 37,500 tons with 42 cm guns, with a design speed of 25 and 24 knots respectively.[34] Even the creators of the plans in the Monarchy were aware that they were only working for the archives, as there was no chance of such an ambitious project ever gaining approval to proceed.

[33] For more information on these ships, see *Forstmeier – Breyer* 2002 p. 44–46.
[34] *Sieche* 1981. p. 126, 133, 136. The main data of the planned Austrian-Hungarian 42 cm L/45 twin gun turret: turret: weight 1100 t, projectile weight 1100 kg,, maximum gun elevation angle 30°, frontal armor 400 mm, side armor and back armor 300 mm, roof armor 200 mm. MMKMA Mladiata Collection, carton #27, "42 cm Geschützturm" [42 cm Turret].

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Addendum - Jutland/Skagerrak Curiosities

The great naval battle between the British and German fleets in the North Sea between 31 May and 1 June 1916 was called the Battle of the Skagerrak (Skagerrakschlacht) by the Germans. In this section, we have collected some of the more interesting, less well-known, or poorly known episodes of what happened on the German side.

Surprise at Dogger Bank

At the outbreak of the First World War, due to the fleet competition and heightened expectations, many people predicted that a major sea battle ("A Second Trafalgar") would soon occur. However, this battle did not occur. On the one hand, the Germans realized that they had lost the fleet race and on the other hand the British had resorted to the implementation of a distant blockade, for which the Germans simply had no plan of how to contest. For the German High Seas Fleet (Hochseeflotte), the order of war was not to risk the fleet and to engage in battle only in circumstances where victory seemed likely. In January 1916, Vice-Admiral Reinhard Scheer became commander of the High Seas Fleet and he promoted a more active and aggressive strategy than his predecessors. He believed that by bombarding coastal towns, he could lure a small part of the British forces out of harbor so that they would find themselves facing a stronger German contingent.

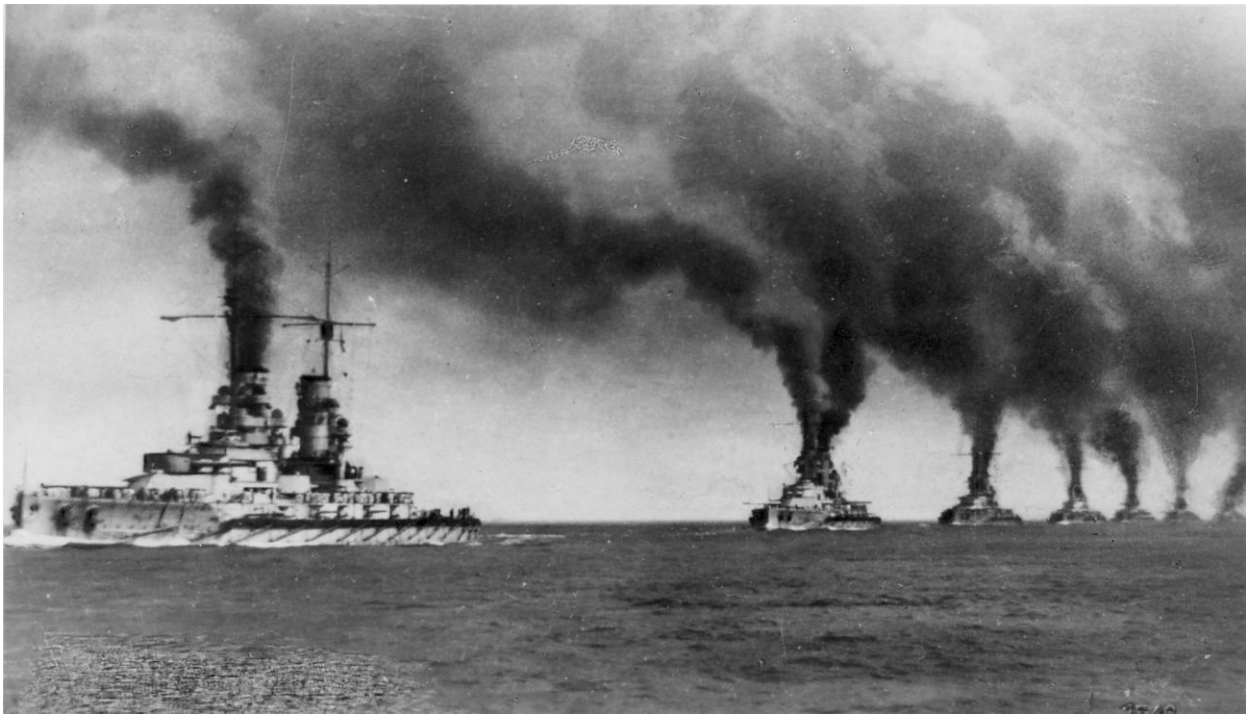


Figure 1 - The German High Seas Fleet (collection of László Kiss)

At the end of May 1916, the Germans planned to force the British out of harbor by bombarding Sunderland, but due to a change in circumstances, they changed their plans at the last minute

and instead ran out in the direction of Dogger Bank at dawn on the 31st. The task of the battlecruisers under Vice-Admiral Franz Hipper was to lure the British battlecruisers under Vice-Admiral Sir David Beatty towards the main German fleet under Scheer. However, the Germans had no idea that the British had a huge strategic advantage: they were able to decode the German radio messages and knew that something was up. Thanks to this breakthrough in intelligence, the British main force, the Grand Fleet, led by Admiral Sir John Jellicoe, was at sea even before Hipper's battlecruisers ran out. The Germans who were about to set the trap had no idea that they were actually the ones heading into a trap. The Battle of Dogger Bank resulted, which saw the loss of the armored cruiser BLÜCHER the serious damage to the battlecruiser SEYDLITZ.

The propellant that saved thousands of lives

It is a well-known myth for those familiar with the history of warships that, learning the lessons of the battle at Dogger Bank in January 1915, the Germans made serious repairs (such as double fire doors) to make their gun turrets flashproof, thus avoiding the fate of the three British battlecruisers that exploded in the Battle of Skagerrak.[35]



Figure 2 - The battlecruiser SEYDLITZ (collection of László Kiss)

[35] See Footnote **20** for more information.

First, a short review of what happened on January 24, 1915 at Dogger Bank. Franz Hipper's three German battlecruisers collided with the five British battlecruisers of Sir David Beatty and Sir Archibald Moore. At the moment, we are interested in one of the hits of the battle, namely the 34.3 cm British shell that was fired from Beatty's flagship LION at 9:43 in the morning and which hit the rearmost gun turret barbette of the German battlecruiser SEYDLITZ (Turret 'D'). This projectile did not go all the way through the barbette, making only a small hole. However, a piece of glowing metal flew into the barbette which ignited the charges in the handling room under the turret. This fire started to spread up and down the turret stalk. The personnel of the lower part of the mounting tried to escape to the adjacent gun turret (Turret 'C'), but when the hatch was opened, the fire was able to spread to the magazine and then to the other mounting, and both mountings were completely burned out and their entire crew of 159 people lost their lives. The magazines were eventually flooded, thanks to Pumpenmeister (Pump Master) Wilhelm Heidkamp, who suffered severe burns while opening the red-hot valves. The German battlecruisers were able to return home without further damage, partly due to the misdirection of the British caused by poor signaling by Adm. Beatty's Flag Lieutenant.

It is a common misconception that the Germans made their gun turrets flashproof after this battle, having learned its lessons, but this is not entirely correct. Although the battlecruiser LÜTZOW did have some hatches modified such that they were thought to be flashproof, the others, including SEYDLITZ, were not modified. The most important action taken by the Germans was to change the ammunition handling regulations to reduce the number of rounds in transit between the magazines and the guns. As it turned out later, the number of charges outside of the magazines still turned out to be too many for safety. The vast majority of German gun turrets according to the British standards of the time could not be considered flashproof at all.

In the Battle of Skagerrak, things eerily similar to the Dogger Bank occurred. Although the German battlecruisers were more heavily armored than the British, their gun turrets and barbettes proved to be weak. As Moritz von Egidy, the commander of the SEYDLITZ, writes in his memoirs about the Skagerrak battle, "Not long after, the artillery center reported from the bottom of the ship: 'C turret is not responding. Smoke and gas is coming from the mouthpiece to Turret C.'[36] It all sounded like Dogger Bank." Von Egidy then praises the preventative measures taken after Dogger Bank, claiming that only 20 people were killed or wounded in the gun turret. This understates the casualties. In this case, a 34.3 cm shell pierced the barbette of the rear superfiring turret (C), igniting two fore and two rear charges. This turret burned out completely, with 64 crewmembers killed directly. Six men were able to escape, but three of them later died of their injuries. It is true that at least the fire did not spread to the other turret as had occurred at Dogger Bank.

One of the latest German battlecruisers, DERFFLINGER, had both of her rear gun turrets burnt out. The top of the aftmost turret (D) was hit by a 38.1 cm shell, setting it on fire. Two of the

[36] German ships, as in most navies of the time, relied upon sound-powered phones to communicate within the ship.

75 member turret crew were able to jump out through the deck openings in the turret used for ejecting spent casings, but one of them later died. Soon after this, a second projectile hit the barbette of Turret (C) and only six of the 74 turret crew survived.

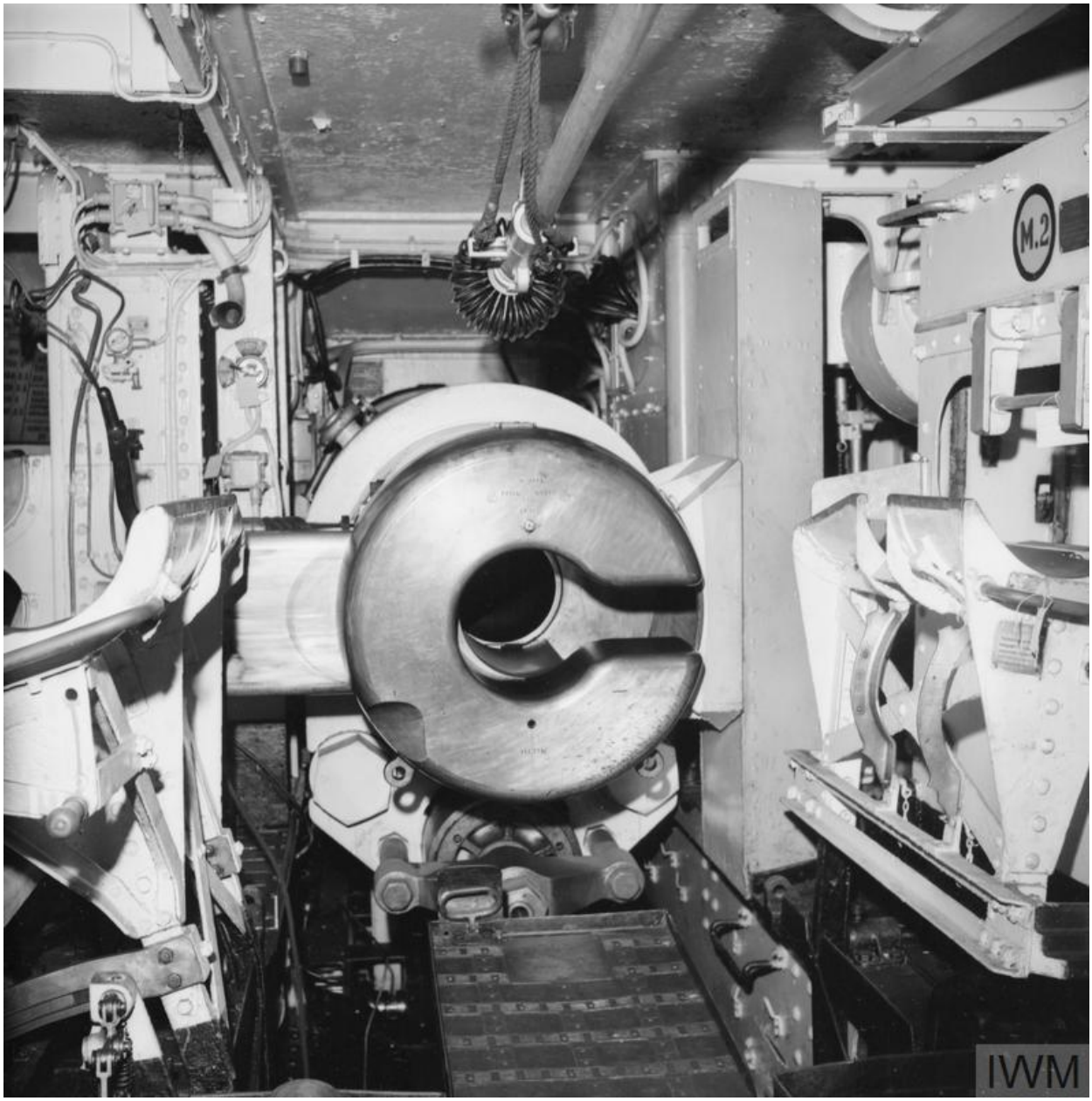


Figure 3 - The interior of a 28 cm gun turret on a German battlecruiser (Audrey Houston Bowden collection, IWM photograph Q71789)[37]

Despite the serious consequences of these turret hits, none of the German battlecruisers were destroyed, unlike their British counterparts. As mentioned above, it was believed for a long time

[37] This photograph was taken on the Turkish YAVUZ (ex GOEBEN), but the turrets on SEYDLITZ were to a similar design. The deck panel in the foreground is for ejecting the spent brass casings.

that Germans had modified the turrets to make them flashproof and this is what prevented a disaster. However, this has been refuted by recent research. As described above, despite the tightening of ammunition management, there were still enough exposed charges in the turrets at this battle to completely burn them out. The most important question, however, is what saved the SEYDLITZ at the Dogger Bank battle, at which nearly six tons of propellant caught fire, while a British ship with less than that would have disappeared into a watery grave with a huge explosion.

As you can already guess from the title, the difference between life and death was the quality of the propellant. British propellant types used at this battle, known as Cordite Mark I and Cordite MD, were famous for their high explosive power. Old German propellant, which had a composition similar to cordite, was already better than those, but prior to the start of the war, the Germans had introduced RP C/12 propellant, which was manufactured with a completely new technology and used a much better stabilizing component. Instead of exploding, RP C/12 burned and it burned relatively slowly. If the Germans had used British cordite, then it is likely that both SEYDLITZ and DERFFLINGER would have been destroyed by magazine explosions. Additional protection was provided by the use of sliding-wedge cannon breech mechanisms which meant that a large part of the propellant was in a thick brass casing, which also protected against flash. However, these items do not fully explain everything, as a part of the propellant was kept in silk bags, similar to the British shallon cloth used for all of their propellant. It seems that the survivors of DERFFLINGER and SEYDLITZ, the latter twice, should have given thanks to the German chemists and propellant factories for being able to return home and not end up at the bottom of the sea like their unfortunate British opponents.

Fregattenkapitän Mansfeld-Colloredo, the Austro-Hungarian naval attaché stationed in Berlin, wrote in his report[38] after the battle that the German officers were extremely proud that the German fleet had not suffered a single so-called "*Totalverlust*" (total loss) against the British. In the German jargon of the time, *Totalverlust* meant the sudden destruction or explosion of a ship. In light of the above, they really had reason to be proud, but this is not entirely true. The case of the old German battleship POMMERN, which was torpedoed during the night, also fell into the *Totalverlust* category. The torpedo hit exploded a magazine and she sank so quickly that there were no survivors left to report what exactly happened. POMMERN was one of the six old battleships, which actually should not have been there in the battle, just like the obsolescent British armored cruisers on the other side.

The fate of LÜTZOW

During the battle, Hipper's flagship, the battlecruiser LÜTZOW, was hit by about 24 heavy shells. The interesting thing about these, as was the case of several other German ships, is that many of these hits were in the bow. As a result, many compartments in the front of the ship were flooded, which caused the bow of the ship to sink deeper and deeper into the water.

[38] *Kramli* 2024, pp. 27-28.

Around half past seven in the evening, Hipper was forced to leave his flagship, transferring to the destroyer G39. The battlecruiser's situation was aggravated by the fact that, as the bow sank deeper, water seeped through the watertight bulkheads through the cable and pipe passages, flooding new compartments. A major contributor to LÜTZOW's fate was that - presumably as a result of underwater hits by the battlecruiser INVINCIBLE - the torpedo room in the front part of the ship, which had a very large cubic capacity below the waterline, was also flooded.

After midnight, the battlecruiser, which was only able to slowly trudge after the German fleet, was determined to be unsalvageable. At that time, it would have contained about 7,500 tons of water, its bow deck was submerged two meters below the water, and its draft at the bow reached 17 meters instead of the normal 9 meters. The water had already reached the front boiler room by this time, and the pumps could no longer cope with the amount of water coming in. They tried to reverse the ship, but the battlecruiser proved unmanageable due to the wind and waves. The stern eventually protruded out of the water so much that the propellers came out of the water, rendering the ship completely immobile. After one in the morning, Captain Victor Harder gave the order to abandon ship. According to estimates, at this time there was already more than 8,300 tons of water in the front of the ship. The four destroyers accompanying LÜTZOW stood by at the stern of the ship and picked up the ship's crew. At a quarter past two, destroyer G38 was ordered to sink the battlecruiser. The first torpedo slipped under the rising stern, so she aimed her next torpedo at the middle of the ship. It hit and the battlecruiser sank in two minutes.



Figure 4 - The battlecruiser LÜTZOW, Admiral Hipper's flagship (collection of László Kiss)

Not everyone managed to transfer to the destroyers. An officer of the LÜTZOW remembered them like this: "*I had to think of the six poor stokers that were still alive when the ship sank. They sat in the forward diesel-dynamo switch room, just like a diving bell, and could not get out. They had called me once, as I had a connection with them, and reported that the water was slowly rising in their room. It was held by pumps at a certain height. They maintained their courage and optimism until the last.*"

SEYDLITZ almost met the same fate as LÜTZOW. Although SEYDLITZ was also hit by a torpedo in addition to about 24 heavy shells, causing her bow to also sink deeper and deeper, she was lucky because the large torpedo room below the waterline did not flood. As Captain von Egidy wrote, this "large swim bladder" helped maintain his battlecruiser's buoyancy and prevented the propellers from lifting out of the water and crippling the ship. The bow of SEYDLITZ thus "only" dived 14 meters, not the 17 meters of LÜTZOW. In the end, he was only able to get through the sandbar at the mouth of the Jade by having two steamers stand by him, constantly pumping water out of the ship.

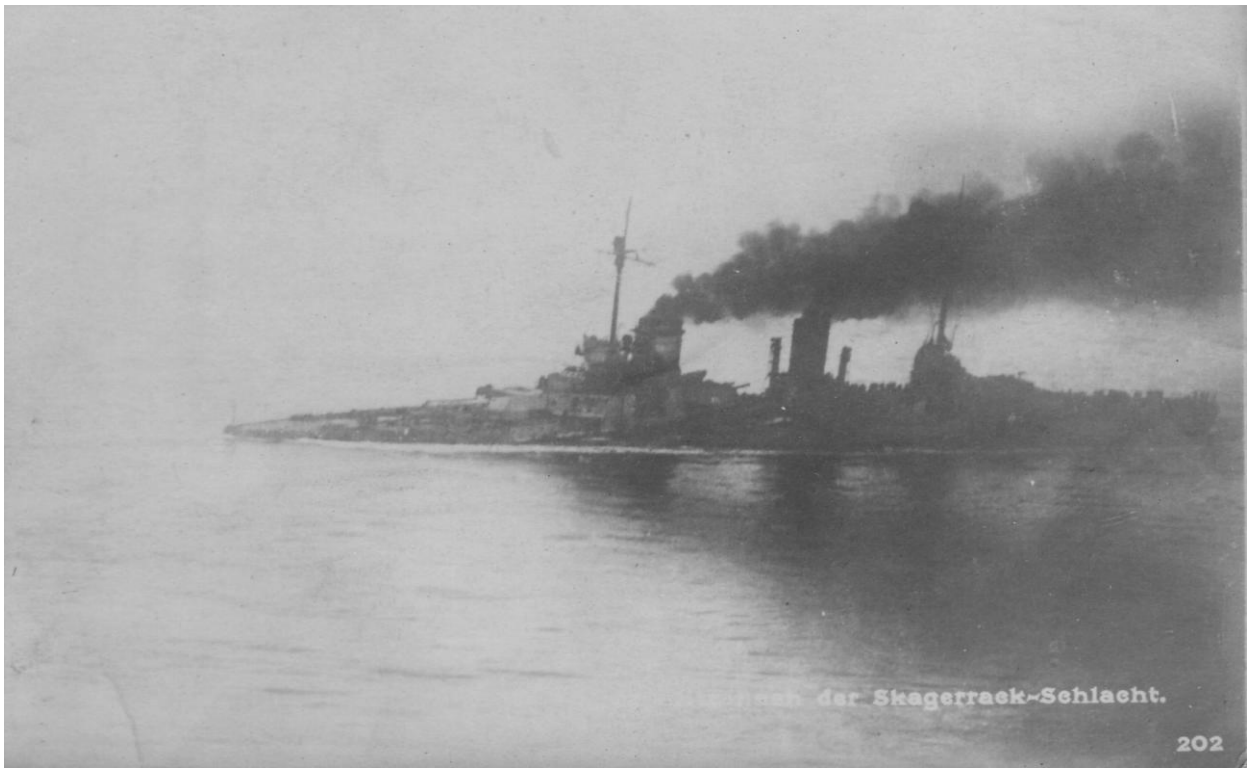


Figure 5 - Crippled SEYDLITZ heading home after the battle (collection of László Kiss)

Gefechtskehrtwendung nach Steuerbord (Battle U-turn to starboard)

Around 16:50, the so-called "Run to the North" phase of the battle began, when Beatty's forces made a sequential 180-degree turn and lured the German fleet in the direction of Jellicoe's main

body. At 18:30, to Scheer's complete surprise, the British Grand Fleet, which the Germans thought was not out at sea, emerged from the smoke and fog. The British, in a tactically advantageous position, opened fire, and Jellicoe's flagship, IRON DUKE, scored seven hits on the leading KÖNIG within minutes. Sensing that they were heading for a death trap, Scheer ordered a simultaneous 180-degree turn to the right (Gefechtskehrtwendung nach Steuerbord) at 18:33. With this skillfully executed maneuver, which the destroyers covered with a smoke screen, the German battle fleet managed to get out of the British fire. A few minutes before 7:00 p.m., Scheer made another simultaneous 180 degree turn to confuse the pursuing British and prepare for an escape after dark, but as a result they found themselves facing concentrated fire from the British battleships. At 19:15 Scheer therefore again ordered a simultaneous 180-degree turn to starboard while ordering the battlecruisers and destroyers to attack as a diversion. The execution of this turn was not so orderly now, but finally Scheer's forces were able to withdraw from the fight in a westerly direction. The "death ride" of the four German battlecruisers led by the commander of DERFFLINGER, Captain Johannes Hartog, played a big role in this escape, In the short but desperate struggle, the German battlecruisers received 37 hits, but in the end they survived and achieved their goal, the escape of the main fleet.
After the battle, the Germans were very proud of the simultaneous 180-degree turns they made in battle. The United States Navy took a keen interest in the history of the battle, so after the war several former German admirals who had participated gave lectures at the U.S. Naval Academy at Annapolis. One of the speakers was Admiral Paul Behncke, who was a rear admiral in the battle. He led a squadron of battleships (KÖNIG and KAISER classes), and he understood very well that it was necessary to shine a light on the German performance but also to fan the vanity of his hosts at the same time. After a long description of the greatness and difficulty of executing the above maneuver, he told the audience that, apart from the German one, only one other navy in the world could have carried such a complicated maneuver under fire: the American one.

The Cauliflower

Count Felix von Luckner, who called himself *Seeteufel* (Sea Devil), became famous and popular later in 1917 with his campaign against merchant ships with the sailing ship SEEADLER. During the Skagerrak battle he had served in one of the gun turrets of the battleship KRONPRINZ. In a memoir, he describes this episode, which took place after the German battleships had successfully withdrawn from the fight.

"*It was already getting dark. We moved south, expecting to resume the battle in the morning. Thinking that the entire deck was covered in shell splinters, I sent a sailor out from my gun turret to collect some as a souvenir. He came back amazed, 'Sir, the British shot at us with cauliflower!' Indeed, he had picked up a whole bunch of cauliflower. The air pressure caused by the firing of the heavy guns had blown open the galley chest, which had been filled with cauliflower, so that the deck looked like a vegetable garden. There was not a single piece of shrapnel. Our imaginations, heightened by the excitement of the battle and the shaking of the*

ship, made us feel that we had been hit a hundred times, but in fact not a single hit was received, despite the fact that the KRONPRINZ had sailed through a veritable barrage of shells."

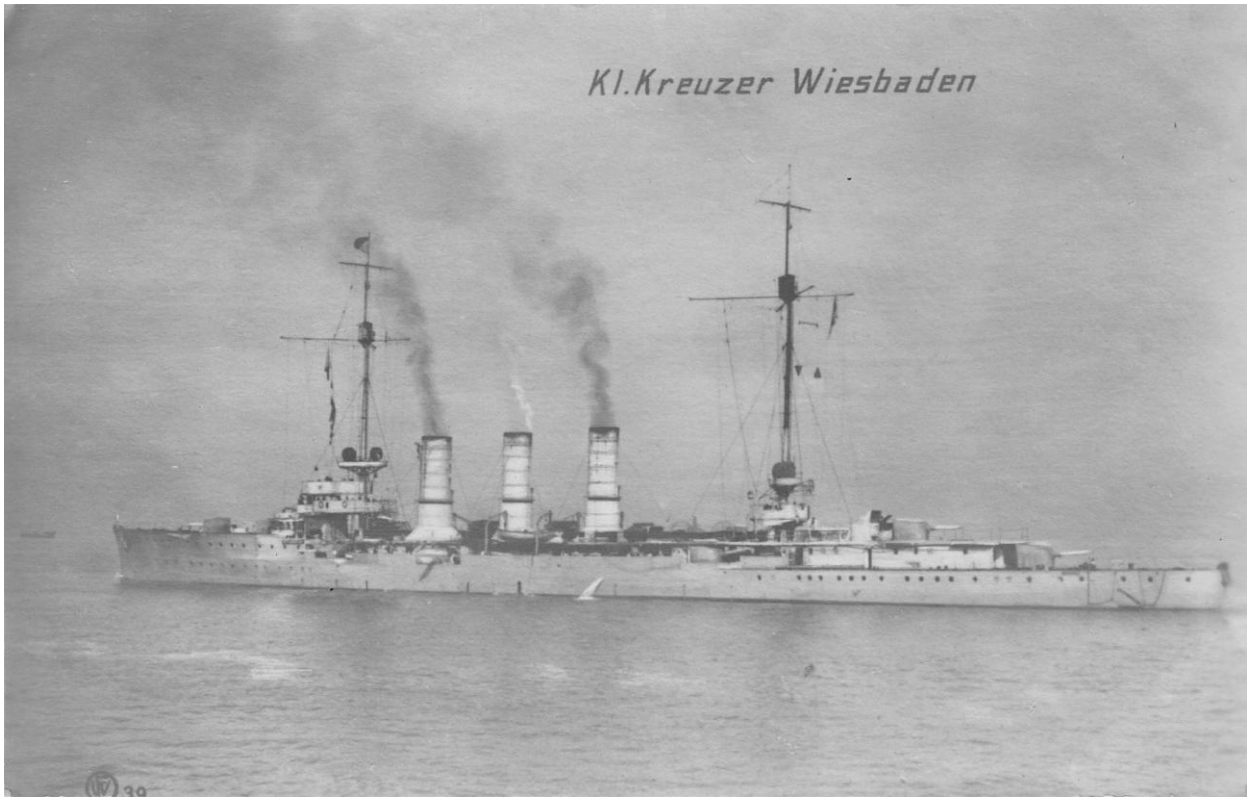


Figure 6 - The cruiser WIESBADEN (collection of László Kiss)

Survivor and Famous Dead of WIESBADEN

Next to the POMMERN, the cruiser WIESBADEN was perhaps the unluckiest ship of the Germans in the battle (although the cruiser FRAUENLOB fared no better either). This cruiser belonged to the Reconnaissance Group and was under the command of Captain Fritz Reiß. At around 18:30, part of the group engaged the British cruiser CHESTER (one of whose guns is now on display at the Imperial War Museum in London), but Rear Admiral Horace Hood's British battlecruisers intervened. Hood's flagship INVINCIBLE hit the WIESBADEN's engine room, crippling the cruiser. A British destroyer then fired a torpedo at her, which also hit, but the cruiser remained afloat. A squadron of British armored cruisers led by Rear-Admiral Sir Robert Arbuthnot then attacked her, hoping for easy prey, but they barely scored a few hits before Arbuthnot's flagship exploded from fire from the emerging German battleships, and another armored cruiser was fatally damaged. The immobilized WIESBADEN then fired torpedoes, one of which hit the battleship MARLBOROUGH. German destroyers made two attempts to rescue the crew of the cruiser. The first time they were forced to abandon the attempt due to heavy British fire. The second time, now after dark, the damaged ship was simply not found. The WIESBADEN finally sank sometime between two and three in the

morning on June 1st. Out of her crew of 590, only one person escaped, Oberheizer (lead stoker) Hugo Zenne, who trod the water for about a day and a half, until a Norwegian steamer took him on board.

One of the crew of WIESBADEN was Johann Kinau, writer and poet, best known by his writing pseudonym Gorch Fock. His novels are mainly about the struggling life of fishermen and sailors. In the spring of 1916, Kinau asked to be transferred from the army to the navy, even though he suffered from permanent seasickness at sea. In the fleet, he was immediately assigned to WIESBADEN. His body was found weeks after the battle on the shore of a Swedish island, and his identification was helped by his poem "Last Wish" which was found in a waterproof box in his pocket, in which he foretold his death. As a writer, he really became popular after 1933, partly thanks to his loyal Nazi cousin, who propagated Kinau as a pioneer of National Socialism. It is a fact that Kinau was strongly nationalist and anti-English, but he can neither be called racist nor anti-Semitic. In 1933, the German Navy christened its new sailing school ship GORCH FOCK. The ship fell into Soviet hands in 1945. In 1958, the West German Navy built another school ship based on the original plans, which was again named GORCH FOCK and is still in service today.



Figure 7 - Johann Kinau, alias Gorch Fock, sailor of WIESBADEN (collection of László Kiss)

A fight in the air

Although the Battle of Jutland was a naval battle, aircraft were also involved. As stated above, with the exception of submarines, almost all categories of warships of the time were represented in the battle. -A seaplane tender was assigned to both to the Jellicoe's battleline and to Beatty's 1st Battlecruiser Squadron. These were ships that stored seaplanes in hangars on their decks. For scouting purposes, these seaplanes were lifted onto the water by a crane, from where they could take off and go on a reconnaissance flight. Naval aviation was still in its infancy during the first half of the First World War, and warships to operate aircraft were not even on the drawing boards. After the outbreak of the First World War, the British converted their seaplane tenders from the those cross-Channel packet ships operating in the English Channel, as well as from old ocean liners rescued from the breakers. Jellicoe's main force was joined by HMS CAMPANIA (a former passenger liner), while Beatty's fleet was joined by HMS ENGADINE (a former channel crossing ship). CAMPANIA was not informed about the run-out order in time, so it fell behind, but ENGADINE started in order.

Learning of the Germans, Beatty ordered ENGADINE to launch a seaplane to scout the area ahead. As ordered, a plane rose from the water into the air after 3 p.m., with Frederick Rutland as pilot and George Trewin, an assistant paymaster, as observer. *"I steered N.10, and after about ten minutes sighted the enemy. Clouds were at 1,000 to 1,200 feet, with patches at 900 feet. This necessitated flying very low. On sighting the enemy it was very hard to tell what they were, and so I had to close to within a mile and a half at a height of 1,000 feet. They then opened fire on me with anti-aircraft and other guns, my height enabling them to use their anti-torpedo armament,"* recalled Rutland, who became the first in the history of naval warfare to spot an enemy warship from the air. After Hipper's cruisers were spotted, an unexpected turn of events occurred: the plane's fuel line ruptured, so it had to land on the water. After the fault was mended, the plane returned to ENGADINE; the plane steered alongside the ship and was craned back on board. It is a twist of fate that Beatty was not notified of what Rutland had seen – there is no sign that messages sent from the mother ship were received on the vice-admiral's flagship. Of course , this does not detract from Rutland's performance, and he was awarded the Distinguished Service Cross after the battle and was known in naval circles afterwards as "Rutland of Jutland."

The Lucky Talisman

Certainly, the fiercest clash of the Jutland battle took place between the battlecruisers of the van, Vice-Admiral Beatty's 1st Battlecruiser Squadron and Vice-Admiral Scheer's 1st Scouting Group. In the process, almost all of the participants were hit, and two British battlecruisers were sunk with the majority of their crews. Among Beatty's ships, however, was one that was protected by more than just its armor and the skill of its crew.

British battlecruisers were large, fast and powerful units but they were not designed to fight sea battles in a battleline. These ships were built mainly for the purpose of rapidly crossing long

distances and destroying raiding enemy cruisers. As a result, their armor was only as thick as needed to protect against the cannons of the smaller warships. However, their high speed and high firepower required a large ship, which made battlecruisers extremely expensive. And besides the expense, their weak protection made them suitable only for a limited number of tasks. Due to these two reasons, even in Britain, which was the largest empire in the world and the wealthiest, they thought twice about how many of them to build.

That's why it came in handy when the when the British Dominion of New Zealand took on the costs of building a battlecruiser. The warship, built on the model of HMS INDEFAGITABLE, was commissioned in 1912 as HMS NEW ZEALAND and visited New Zealand the following year. There, the ship's captain received a battle skirt (piupiu) and a lucky talisman (tiki) made of jade from a Maori chief. The chief told the captain that when the battlecruiser went into battle, he must wear both the talisman and the skirt, because if he did so, the ship, while not invulnerable, would survive the battle. Also, *"there was a special steering wheel which had to be shipped in action – this was made from different New Zealand woods and was inscribed with a Maori war cry,"* remembered a cadet of the ship.

Every time HMS NEW ZEALAND entered action during the war, the crew sent a sailor to the bridge to spy out whether the captain was following the chieftain's recommendation. The crew never had to be disappointed, the current captain wore the battle skirt over his uniform according to the order and manner given by the chief, and he wore the talisman around his neck. It was no different in the Battle of Jutland. It is not known whether there was a connection, but the battlecruiser survived not only the clash of battlecruisers, but the entire battle with but a single hit, and no one on board fell.

Early anti-aircraft attempts

As the date changed from May 31st to June 1st, the Imperial Fleet passed behind the main British force and made its way to port. At two o'clock in the morning, Jellicoe still had no idea where the main enemy force was located. About three o'clock he turned, hoping to meet the Germans; however, they had already made their way past the British fleet.

Also at three o'clock in the morning, the Zeppelin L11 of the German fleet was spotted from the British ships as it was making a reconnaissance flight. At last they had found themselves a target, so every British ship that saw it fired at it. Several battleships did the same. They also attacked the airship with their heavy guns, as this was the easiest way to empty the loaded barrels. On HMS AGINCOURT, a lieutenant recorded the action: *"...still in the early daylight hours, we sighted a Zeppelin and, as besides having my turret, I was the anti-aircraft officer, I quickly manned our only anti-aircraft gun, a 12 pdr high angle gun. Its maximum range was about 8,000 or 9,000 yards. Nevertheless, we cheerfully engaged the airship which was probably eight or nine miles away, but it gave us something to do – and something to laugh at. Nothing daunted, the REVENGE opened fire with her 15" guns at maximum elevation."*

The dreadnought's heavy guns did not hit the airship, but they almost caused trouble. As remembered by an officer of the battleship HMS MALAYA: *"Just after dawn broke, when the whole horizon was clear, not a sign of an enemy anywhere, and suddenly out of the sky dropped a salvo of shell, about a mile from us. The Captain shouted, "Where are they? Where are they?" We learnt much later that it was merely the REVENGE, who some 15 miles away, had fired at a Zeppelin."*

The horrors of combat

Although many interesting, strange, or even amusing stories happened during the battle, we must not forget that for many people it was no easy matter. Sometimes the shells that hit the ships did not cause any damage, but in other cases they were extremely destructive. The exploding projectiles and the resulting fires caused many deaths and serious injuries to members of the crews. More than 6,000 British sailors and over 2,500 German sailors died on the ships involved in the battle. The medical personnel tried to treat the wounded properly, although they could not effectively treat the burn victims and the invention of anti-bacterial agents like penicillin were many years in the future, which meant that numerous wounded died days or even weeks after the battle due to infections.

Most of those killed during the battle itself were given a burial at sea on the way back to port. Recalled the Catholic priest of the battlecruiser TIGER: *"The bodies were got together and sewn up in sackcloth - leaving their sea boots sticking out. They were then placed on the starboard superstructure. They had some difficulty in piecing together those who had been smashed up - in one or two cases the sacking with the body inside was not more than 2ft 6" long. Word came through later that they would be buried at 6.30. A row of mess tables were placed with one end over the starboard side of the quarterdeck and the bodies were laid two on each mess table. A six inch shell was placed under their heels and tied onto their sea boots to ensure the bodies remained at the bottom. We all collected round and the Church of England padre first of all said the burial service, then I said mine and then we both said the words of committal together."*

Each participant experienced the battle differently. Among them, one of the most interesting lessons was certainly learned by the officer of one of the gun turrets of the battlecruiser INDOMITABLE: *"Should it be my good fortune to be engaged in another action, I shall take care that only one gramophone is taken into the turret. In my turret we had two, one in the gun-house and one in the working chamber, and during every lull in the action these two were started playing simultaneously, each with a different record. The result was one of the real horrors of the war.*"