THE DEVELOPMENT OF THE GERMAN SUBMARINE,
AND SUBMARINE DOCTRINE; 1900-1915

A Thesis
Presented in Partial Fulfillment of the Requirements
for the Degree Master of Arts
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1976

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INTRODUCTION

In February 1915 Germany declared the waters surrounding Britain a war zone and established a blockade that was to be enforced by her submarines. The Germans thus initiated a new dimension in naval warfare. The February 1915 decision is often overshadowed by the more consequential decision for unrestricted submarine warfare in January 1917. However, the February 1915 decision was the first step in a two year process that eventually resulted in American involvement in World War I.

During the sixteen years preceding the outbreak of war in 1914, Germany busily built-up her Navy. Supported by Emperor Wilhelm II and guided by Admiral Alfred von Tirpitz, Germany's new fleet was designed for political and military use. In what manner, then, did the submarine, a relatively new weapon, fit into pre-war German naval plans?

Until 1912 Tirpitz, who as State Secretary for the Navy controlled naval construction, regarded the submarine as a defensive weapon, unneeded by Germany. As long as the submarine remained a defensive weapon, Tirpitz refused to spend precious funds on its development. Naturally, this brought Tirpitz into increasing conflict with the Navy's line officers, who were less enlightened about his grand strategy and who worried more about the Royal Navy's superiority in
heavy surface warships. These officers wanted immediate preparedness, not future preparedness as promised by Tirpitz. The German Navy was thus divided by two opposing strategic cliques. These groups came into direct conflict during the development of the submarine.

Politically, Tirpitz encountered opposition from chancellors Bernhard von Bülow and, later, Theobald von Bethmann Hollweg. As the growing German fleet increased tensions with Britain, these men sought ways to ease the situation. One of the alternatives was to de-emphasize battleships and cruisers and concentrate on smaller, less provocative weapons such as the submarine. However, Tirpitz, supported by Wilhelm, refused to alter his plans.

German naval theorists gave little thought to using submarines as commerce raiders. Naval journals made no reference to the idea and, except for a few non-official articles on the subject, the German Navy only made one pre-war study of the submarine's possible use in this role. This possibility was not considered until the spring of 1914. At that time the idea was too radical, and no further action was taken on it before the war. Instead, the targets designated for the submarine were the enemy warships, not merchantmen. For the first few months of the war, German submarines vainly sought the Grand Fleet in an attempt to equalize the strength of the two opposing fleets. War conditions, however, altered pre-war opinions of the submarine. Early in the war
it became evident that mechanically the submarine had been underestimated. Sea endurance and operational radius were much greater than expected; vast areas of ocean were now opened up to the submarine. Conversely, it became evident that with proper caution enemy warships could avoid submarine attacks. Korvettenkapitän Hermann Bauer, the commander of the submarines, therefore, looked for new ways in which to use the submarines to influence the war. He soon considered using them against the thousands of merchantmen plying the waters surrounding Britain. His idea rapidly spread among the line officers who supported it.

From October 1914 until February 1915 the submarine commerce war idea was continually discussed by the leaders of the German Navy. Admiral Tirpitz, Admiral Hugo von Pohl, Chief of the Naval Staff, and the Naval Staff, all agreed that sooner or later submarine warfare on merchantmen should be carried out. Pohl, however, became the more ardent advocate of commerce raiding and urged its immediate adoption. For military reasons Tirpitz wanted the new strategy delayed until the spring or summer of 1915. The Naval Staff was more concerned with the political effects upon the neutrals and advised delay until the situation was clearer.

Similarly, Bethmann Hollweg and the Foreign Office agreed that a submarine commerce war (or blockade as it was soon called) was warranted, but, fearing the reaction of the neutral states could not reconcile it with international law
or justify the risks to German diplomacy.

Admiral Pohl struggled to have the submarine blockade approved, but he constantly was frustrated by the Chief of the Naval Cabinet, Admiral Georg Alexander von Müller, and Tirpitz. Decision-making in the German Navy was divided so that Emperor Wilhelm had the final decision in the matter as he did in all matters. Admiral Tirpitz, who appeared to be the head of the Navy during peacetime, had, in fact, no actual influence on the conduct of the war except as an advisor to Wilhelm. Direction of the war fell to Admiral Pohl, who justifiably resented Tirpitz's meddling. This poor relationship eventually deteriorated into hostility, culminating in late December 1914 with Pohl's decision to no longer work with Tirpitz. Also, in January 1915, Pohl decided to bypass Müller, whom he saw as an obstacle in the path of the submarine blockade. Pohl, working independently, was able to push the decision through without either Tirpitz or Müller having an opportunity to stop him.

In addition, the clash between Pohl and Tirpitz served as a disruptive force at General Headquarters. There was little leadership or guidance given to the submarine war, allowing Bauer to operate independently. No detailed study was made by the Naval Staff, and neither it nor Pohl understood the complexities of such an operation. It was actually Hermann Bauer who drew up the plans and issued the orders for the blockade. Pohl and the Naval Staff, which endorsed the
submarine blockade in January 1915, overestimated the ability of the submarine to cut-off effectively British shipping. Buoyed by the hope of starving Britain in a few short weeks, they announced that the Navy was confident of success and prepared to carry out the blockade. The chancellor, Bethmann Hollweg, who was under pressure from the public, weakened, and apparently gave his verbal consent to begin the blockade. Actino quickly, Pohl pushed the decision through within three days. Unprepared militarily, Germany launched the February 1915 submarine blockade of Britain, a policy that eventually contributed to America's intervention before Britain could be defeated by economic strangulation.
CHAPTER I

DEVELOPMENT OF THE SUBMARINE TO 1914

1. Pre-Twentieth Century Development

During the wars of the French Revolution the British fleet blockaded France. Robert Fulton, a sympathizer with the ideals of the revolution, wanted to help the French. In 1797 he journeyed to France and built a submarine, the Nautilus, which he believed capable of breaking the British blockade. After several unsuccessful demonstrations the French government, under the influence of Napoleon, who believed Fulton to be a swindler, lost interest in Fulton's invention. Undaunted, Fulton crossed the channel to Britain, determined to prove Nautilus' value as a naval weapon. Despite initial support and successful demonstration of Nautilus' capabilities, British naval officials rejected Fulton's plan. Trafalgar swept away the last threat to British seapower and their interest in Fulton's project went with it. The First Lord of the Admiralty remarked that Britain had no interest in developing a weapon that threatened to destroy her command of the sea. In 1806 a frustrated Fulton abandoned his ideas of a submarine and returned to America. There he turned his energies to more fruitful projects.

Further attempts to build a submarine followed during the nineteenth century. In 1850, during the German states' war with Denmark, Wilhelm Bauer, an artillery corporal, built a submarine that he believed could drive the Danish fleet from its blockading stations outside the north German harbors. A small submarine, the Brandtaucher, was built. Although it sank on its maiden voyage and thus was never used against the Danish fleet, fear of its presence and the seeming threat it represented caused the Danish fleet to sail farther out to see.

A successful attack on a warship by a submarine finally took place during the American Civil War. Caught in the strangling grasp of the North's blockade the South attempted anything that offered a chance of success. At Charleston, South Carolina on 17 February 1863 the Hunley, a crude submarine propelled by a hand-driven crankshaft, sank the Housatanic, a Union vessel on blockade patrol.

While the Hunley was sinking the Housatanic, the French Navy was engaged in research with its own submarine. Launched in 1863, Le Plongeur was certainly the most impressive-looking submarine yet built. She was 140 feet in length and displaced 420 tons. The French improved on the hand-driven

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crankshaft with an 80 h. p. engine driven by compressed air, but the engine was not powerful enough to drive a boat of _Le Plongeur's_ size. Besides, _Le Plongeur_ had a serious defect: lack of stability. When submerged she had a tendency to oscillate up and down, making navigation difficult and causing discomfort and horror among her crew. Discouraged, the French Navy temporarily abandoned its researches with the submarine, though not its interest.

There was very little official involvement with submarine development during the next two decades. It was mostly left up to private individuals like John P. Holland in the United States to carry on this development alone. Holland, an Irish immigrant, was aided by the Fenian movement in constructing his first boats. His first boat was launched in June 1878. Methodically testing and improving, Holland built more boats in the early 1880s until he lost the backing of the Fenians in 1883.

France inaugurated the next stage of submarine development in 1886 when the French naval minister, Admiral Theophile Aube, leader of the _jeune école_, ordered two submarines to be built for the Navy. In 1893 _Gustav Zede_ was completed. She was truly a naval vessel, the most advanced submarine of her time. Displacing 266 tons, _Gustav Zede_ was

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powered by an electric storage battery and equipped with hydroplanes forward and amidship for better stability. The battery, however, restricted her to a small operational radius and, hydroplanes or not, she was still difficult to keep stable underwater. Dissatisfied with the progress of their submarine development, in 1896 the French held an official competition for submarine designs. A naval technical committee acted as judge and selected two "winners" from a field of over forty submitted designs. Narval and Farfadet were the result.

As developed by the French in the 1890s, the submarine was little more than a seaward extension of coastal defense fortifications. The many limitations submarines contained restricted them to a defensive role. The engine was still the single most important feature which required development. Narval had been designed with two engines, a steam engine for the surface, and, because there was not enough air to operate the steam engine underwater, an electric storage battery for underwater travel. When diving the steam engine had to be disconnected and the battery put into operation. A process that took about twenty minutes. Underwater the battery quickly ran down.

6 Brassev's Naval Annual, 1902, p. 147; Jameson, pp. 54-56; and Horton, p. 43.
8 Horton, p. 52.
France's activity in submarine development evoked surprise and curiosity in the United States, but there was little reaction in European navies. Not until November 1900 did the Royal Navy grudgingly give up its century-long anti-submarine dogma when the Admiralty made an agreement with the Electric Boat Company of America to license the construction of five Holland-designed submarines—adopted by the U. S. Navy in October 1900—in Britain. The twentieth century began with Europe's two leading naval powers actively engaged in submarine construction. Yet each was motivated by quite opposite reasons.

Because of the substantial inferiority of the French Navy to the Royal Navy, French naval opinion tended to regard the submarine as a possible means of overcoming this numerical imbalance. In the 1880s the jeune ecole revived the idea of a guerre de course against Britain. However the submarine's own limitations and the jeune ecole's subsequent decline "was largely responsible for a general failure to foresee the strategic possibilities of the submarine." The Fashoda Crisis in 1898 brought the threat of an Anglo-French war and produced a "more vigorous policy of submarine construction in France." If British warships imposed a close


blockade--as they would--submarines would sink them and drive them away. In other words, the submarine would "neutralize Britain's naval supremacy." French submarine maneuvers, therefore, were directed towards breaking up blockading squadrons, as well as penetrating harbors.

Britain's decision to build submarines was inspired not by the Admiralty's belief in the submarine's value as a weapon nor from fear that France was devising methods that rendered a close blockade risky. French development of the submarine's offensive potential spurred the Admiralty. It was the desire to solve the problems of defending against the submarine that influenced Britain's decision to build submarines.

2. Submarine Development in Europe, 1900-1914, and the German Reaction

By the outbreak of World War I every major naval power in the world was constructing submarines. The years preceding the war were filled with rapid technological advancement for the submarine, mostly pointed towards the development of a suitable engine. While this technological development was in progress, naval leaders had to decide an important issue: what role the submarine would play in the general strategy

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12 Marder, pp. 362, 356-61; Jameson, pp. 73-74.
of naval warfare. Some navies visualized the submarine in a
defensive role, protecting their harbors and coasts; others
sought to develop the submarine's offensive potential for
use against enemy warships. Still others wanted a dual role
for their submarines, offensive and defensive.

Submarine strategy became wholly dependent upon the
technical development of such things as the engine, periscope,
and torpedo, as well as underwater stability and habitabil-
ity, which affected the performance of the crew. The sub-
marine could not be assigned a role in naval warfare it was
technically unable to fulfill.

Germany did not build its first submarine until 1905,
but its navy observed the submarine's development in both
the technical and military fields with keen interest. A
fairly accurate view of the opinions in the higher echelons
of the German Navy about submarine development can be found
in the naval journals published from 1899 to 1914. Three
major journals published at that time were Nauticus, Marine-
13
Rundschau, and Die Flotte. Nauticus and Marine-Rundschau
were prepared and published by the Naval Public Information
Section of the Reichsmarineamt, the Nachrichtenbüro.
Nauticus was an annual and Marine-Rundschau a monthly.
These journals were "both considered in the nature of offic-
ial publications." While avoiding discussions of new devel-
opments and "controversial issues" within the German Navy,

13 Marine-Rundschau was unavailable for use and Die
Flotte was available only from 1910.
these journals discussed "purely technical subjects as they
developed in foreign navies...." The Secretary of State for
the Navy, Admiral Alfred von Tirpitz, was kept abreast of
the issues discussed in the journals and undoubtedly exert-
ed much influence on their nature. His approval was required
before publication. Tirpitz admitted in his memoirs that
the real purpose of these journals was to give "the public a
sober estimate of its work." The Reichsmarineamt was able to express its "opinion on naval
matters and the practical issues more freely and without
official weight."

Die Flotte, on the otherhand, was not an official pub-

cation. It was the monthly organ of the Deutsche Flotten-
verein, the German Navy League. A variety of civilians,
university professors, and naval officers wrote articles
for it. Articles, however, were not limited to technical
and strategic matters. Most often discussed was Germany's
need for greater sea power.

14 Erich Raeder, Mein Leben, 2 vols. (Tübingen-Neckar:
was the chief reviewer on the staff which published Nauticus
and Marine-Rundschau in 1905-1906. Besides himself, the
staff included a director, another naval officer and a civil-
ian professor at the University of Berlin. Tirpitz once
questioned Raeder for three hours before giving final approv-
al for the publication of Nauticus.

15 Alfred Tirpitz, My Memoirs, 2 vols. (New York: Dodd &
Mead Co., 1919), vol. II fn. p. 147.

Nauticus first gave extensive coverage to submarine development in 1902. Its overall appraisal was rather subdued. If there were no "epoch-making" developments soon, it stated, the future of the submarine was dim. During this time a debate raged over whether the "true" submarine, which had only an electric engine, or the submersible, which had a steam engine (later gas and diesel) for surface use and an electric engine for underwater was best. Nauticus gave its view on the debate: "The various types of submarines show that the development of the submarine has not yet progressed far enough so that a decision can be made for one model or another." Experiments by all nations, it continued, had not led to a solving of the question of which type (Typenfrage) of boat to build. France had several different types and Britain, proceeding cautiously, had only one type, the "true" submarine. At present there was "no satisfactory solution."

Nauticus endorsed the submersible because of its greater operational radius. But its slow diving time, it noted, was a liability. "Fast diving is an important military requirement. The submarine's characteristic of invisibility is dependent upon it, and so is the use of the torpedo."

18 "Der heutige Stand der Unterseebootsfrage," Nauticus, 1904, p. 117.
19 Nauticus, 1902, p. 123.
A look at the diving times of a few submersibles was sufficient proof. The French Navy's Narval required between twenty-five and thirty minutes, the U.S. Navy's Adder twenty-five minutes and Pike, of the same class, fifteen minutes. Uncertainty over this issue prevailed more in France than elsewhere. Tests were conducted in order to find a solution. At Cherbourg in March 1902 a competition was held between a submersible, Aigrette, and a "true" submarine, Z. Results were inclusive, a confirmation of facts already known. Unable to reach a decision, the French Navy decided to continue building both types of submarines.

Periscopes were another difficulty. Early scopes were rigid and immobile and only presented a sixty degree view of the horizon. In order to see, submarines had to rise nearly to the surface and make almost a complete circle, sometimes "porpoising" in the process. Condensation, rain, vibrations in the boat, heavy seas, prisms, and night presented additional problems in periscope vision. Nauticus considered that the "chief and ultimate purpose" of a submarine was to fire its torpedoes unseen, a fact which depended upon its vision. When the periscope was perfected, the submarine

20 Nauticus, 1905, p. 103.
would be of offensive military value. Until then it remained a weapon of coastal defense.

Nautilus commented little upon the torpedo itself, besides noting that whether a torpedo attack was successful or not depended upon stability, diving conditions and speed of the target.

Submarine safety was another topic that concerned Nautilus. Submarine hazards included the small area of movement, foul air, the movement of the boat in high seas, the feeling of uneasiness, and the continual tense watchfulness and alertness that the commander and crew had to observe, for the least relaxation often resulted in disaster. The last hazard made Nautilus wonder whether the crew could stand the strain of long cruises if the submarine ever achieved the technical ability to operate on the high seas for an extended period.

In July 1905 an article appeared in the New York Times urging all nations to abandon the submarine because of the dangers to the crew. This exhortation was stimulated by the recent sinking of the French submarine Farfadet, the fourth submarine accident in sixteen months. The other three involved British submarines. While running along the surface with her hatch open A-8 suddenly dived, taking her entire crew of fifteen to their graves; during 1904 maneuvers A-1

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22 Nautilus, 1902, pp. 75, 80-81; Nautilus, 1904, p. 125.
23 Nautilus, 1904, pp. 118, 131.
was rammed and sank with her entire crew; and six men were killed and twelve injured during an explosion of the gas engine on A-5. According to Nauticus, this last accident was a result of the uncertainty of the operational regulations for the gas engine. Left uncovered, the gas engine emitted sparks that ignited gas fumes. Lack of standardization was a problem at this stage in submarine development and was responsible for many of the mishaps. It was extremely difficult to train crews when almost every submarine was different. For the most part, Nauticus claimed, submarine accidents were not caused by material defects, but rather by mistakes made by the crew. Accidents showed that careful, well-trained crews were needed to operate submarines.

Other European navies were also building submarines. Italy experienced much the same problem as France; uncertainty about which type boat to build. Russia relied heavily upon foreign-built submarines, especially during the Russo-Japanese War in 1904-05. At that time they ordered three boats from Germany and ten from Simon Lake in the United States. Austria-Hungary did not possess the technical skill required to build submarines. Instead, two boats were built in 1906 under the supervision of U. S. builders, and the machines and parts were imported from U. S. factories. These three nations never possessed more than ___________________

Nauticus, 1907, pp. 111-12.
second class submarine fleets. France, Britain, and later Germany led the way in submarine development in Europe.

France led the way in experimenting with the submarine's military development. In July 1902 the French initiated a series of submarine maneuvers. The first maneuver involved four submersibles and was interrupted by poor weather and heavy seas. Because the submarines were accompanied by a torpedo boat escort, Nauticus thought the maneuver was valueless. If the boats had operated alone they would have had to overcome obstacles by themselves and would have greatly benefited from it. The results of the exercise were not known in Germany. Further exercises were held in 1902. A commission was formed to plan and coordinate joint maneuvers between submarines and ship squadrons. Three "true" submarines and three submersibles participated and were given specific assignments to carry out.

Results were not encouraging for either type of boat. Torpedo attacks made at ships at anchor were successful but, once under way, ships were extremely difficult to hit even if they sailed in a straight line and the submarine knew their course. Ships following a zig zag course were almost impossible to attack, and a speed of twelve knots was thought to make a ship invulnerable to attack. Only one of the six boats made a successful torpedo attack on the high

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seas, and this, Nauticus said, was by chance. The submarine was still an "imperfect instrument of war" (unvollkommen Kriegsinstrument), and essentially the presence of a submarine was more a moral factor than a real threat. Results confirmed the fact that submarines were still only coastal defense weapons. As an offensive weapon the submarine was a "quantité négligeable." Indeed, the French seemed to think so too. Offensive maneuvers virtually ceased for the next three years.

British development of the military use of the submarine concentrated on its defensive value. Under the leadership of Captain Reginald H. Bacon, Inspector of Submarines, submarines participated in many maneuvers, especially with the Home Fleet. The results of these maneuvers caused the Royal Navy to reevaluate its traditional doctrine of close blockade. Bacon was encouraged to continue experiments by Admiral Sir John Fisher, the most influential figure in the Navy at this time. Even Fisher, at first, saw the submarine as a coastal defense weapon. It was only later that he envisioned offensive forays on the high seas and to enemy coasts. Defensive thinking, at least where the submarine was concerned, dominated British naval opinion. Progress in

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27 Ibid., pp. 135-36, 142.
28 Nauticus, 1903, p. 44.
submarine development was slowed because of the numerous accidents, resulting in overcautiousness, and, until Roger Keyes took over as inspector in 1911, submarine maneuvers remained, for the most part, unrealistic.

Perhaps because Britain was Germany's chief naval rival, Nauticus said so little about her submarine development. Readers were usually reminded that Britain's involvement with submarines was due primarily to the pressure of public opinion, which was upset because France had the lead in submarine development. This was an obvious attempt to play down the fact that Germany had come late to the submarine field. Die Flotte added that Britain, like France, possessed a long coast line with many harbors which needed protection. Submarines were a natural weapon for this.

Germany, on the other hand, did not possess a long coast line that needed defending. As long as the submarine had a restricted operational radius (one hundred miles) it


30 Nauticus, 1902, p. 64; Nauticus, 1903, p. 35; Nauticus, 1904, p. 140; and also Kapitänleutnant Schaper, "Die Unterseeboote, ihre Entwicklung und ihre Aufgabe," Die Flotte (April 1912), p. 64.
offered little military value for Germany. If not needed for coastal defense, what purpose would submarines serve? A one hundred mile radius of operation meant fifty miles out and fifty miles back. Fifty miles from most German seaports was either in the middle of the Baltic or North Seas. Submarines might be used in the roadsteads in the eastern Baltic or the Danish Belts in the west. But, Nauticus stated, submarines were not yet ready for use in the rough North Sea. Until the submarine was capable of cruising the high seas for offensive purposes, the German Navy concluded that they were of limited value to Germany.

Nauticus, 1904, pp. 140-42. This volume included a chart listing the major German seaports in the Baltic and North Seas and showed the position a submarine would have if it sailed fifty miles east, north, west, and south.
CHAPTER II

SUBMARINES OR BATTLESHIPS:
CONFLICT IN THE
GERMAN NAVY

1. The Birth of the Fleet

Germany's fleet served different purposes and satisfied many desires. That Germany built a fleet was not odd. The period was one of intense naval construction on the part of many nations, regardless of their need or position as a world power. During the latter half of the nineteenth century Germany joined the powers of Europe, if not the world, militarily, politically, and industrially. Although Germany gained entrance to this elite group, she lacked the trappings that were usually included with such a position: colonies. Unfortunately there were too few areas available for acquisition by Germany, a latecomer doomed to settle for leftovers.

A colonial empire demanded a strong navy, and Germany seized the opportunity to build one. Both the search for colonies and the build up of her fleet brought her into direct conflict with the greatest colonial and naval power, Britain.

Germany's "naval armament was ultimately intended, from the very first, to achieve a great offensive aim." This aim was a "new outlet for Germany's power through her navy" and "achieving equality in prestige and in actual fact, with the
other powers in the coming world system of states. But expressed in another way, this meant that it consisted in the expulsion of England from her position of supremacy...."

This leads to Admiral Tirpitz's "Risk Fleet" theory. Tirpitz predicted that the eventual size and strength of Germany's fleet would deter an attack from a potential enemy, who, even if victorious, would be so severely damaged as to be helpless before another strong naval power or coalition of smaller powers. In addition, the alliance value of Germany (Bündnisfähigkeit) would be increased by the development of a strong fleet.

With the fleet acting as a political "lever" against Britain, Germany could finally take her destined "place in the sun." But the fleet was popular for more reasons than this. The German Navy was one of the few national institutions in a Reich dominated by Prussia. Middle-class liberal support for the Navy was rooted as far back as the revolution of 1848. In fact, the Navy was predominantly middle-class, as evidenced by its officers. The Army was still dominated by the Prussian aristocracy, which closed promotions to the middle-class. The Navy was not. But the Navy was more than just an outlet for a frustrated middle-class. German greatness and Kultur—the German way of life,

standard of living, and spirit—were embodied in the great steel ships of the fleet.

To a certain degree the fleet helped stabilize Germany internally, funneling off some of the rising discontent of the working class and preserving the status quo. A strong fleet would enable Germany to expand overseas, increasing her economic power and her prestige. This hopefully would stop demands for parliamentarianization; socialist energies and ambitions would be transposed to colonial expansion and the position of the conservative ruling class would be buttressed. The idea of a fleet was, according to Volker R. Berghahn, "nothing less than an ambitious plan to stabilize the Prusso-German system and to paralyze the pressure for change."

However, the role of Emperor Wilhelm II should not be overlooked, for without his support there would have been no German fleet. From his boyhood Wilhelm was captivated by the

sea. As he later wrote to Czar Nicholas II of Russia, "the passion for the sea is inborn to us...." A grandson of Queen Victoria, Wilhelm spent much of his youth in Britain and never ceased to admire the Royal Navy. He was an Admiral in the Royal Navy and took his rank seriously, constantly inundating British officials with his views on technical details, maneuvers, and guns. Soon after his accession to the throne in 1888 Wilhelm reorganized the German Navy. Concerned with his own personal control, Wilhelm divided the Navy into three separate departments. Wilhelm desired an increase in the fleet but the naval bills in the 1890s lacked clarity and little was done. By 1895 Wilhelm was becoming impatient and soon thereafter he appointed Konteradmiral Alfred von Tirpitz to give new direction and purpose to Germany's naval development. Without Wilhelm's enthusiasm the development of the Navy could not have taken place as quickly as it did. Years later Vizeadmiral Eberhard von Mantey wrote that "the Kaiser constantly stirred the flames of naval enthusiasm among the people and within the Navy itself."

35 Steinberg, Yesterday's Deterrent, pp. 72-73.
36 Documentary Section, Militärgeschichtelichte Forschungsamt: III M 503/1 (7741), 14 March 1932, cited in Ibid., p. 27.
2. Tirpitz and the Navy

Traditionally, the German Navy had perceived its role as that of coastal defense. During the 1880s and 1890s the Navy was organized to defend the coast against a possible Franco-Russian attack. Cruisers and smaller vessels such as torpedo boats were the most favored vessels for this mission. Battleships were considered a luxury. Admiral Tirpitz, father and mastermind behind the High Seas Fleet, disapproved of using the Navy only for coastal defense. Tirpitz, an advocate of Captain Alfred Thayer Mahan's theories, believed that Germany should have battleships capable of operating on the high seas. Until the fleet was built he wanted few coastal defense forces or raiding cruisers, but a battlefleet concentrated on the North Sea, ready to use its influence on Britain. As early as 1894 in a memorandum, Dienstschrift IX, Tirpitz argued against "pure coastal defense" and supported offensive sorties by high seas squadrons.


When Tirpitz became Secretary of State for the Navy in 1897 and thus directly responsible for the Navy's development, he instituted his battlefleet policy and thus essentially broke with traditional German naval doctrine. But in the following years, as the build up of the High Seas Fleet continued, Tirpitz often had to struggle against the opposition of naval officers who disagreed with his policy.

Soon after his arrival at the Reichsmarineamt Tirpitz detailed the basis of his fleet program for the Emperor. The fleet would be built against Britain. "It is certainly the enemy against which we require a certain measure of naval force as a political power factor." A fleet was needed for use between Heligoland Bight and the Thames. A commerce war was a hopeless endeavor against Britain; Germany "must ignore this type of warfare...." Battleships were needed if Germany was to have any hope of influencing British actions.

Tirpitz believed that an offensive-minded fleet, by its very presence, fulfilled the role of coastal defense. Other means of coast defense like submarines and fortifications need not be developed. Everything, in Tirpitz's view, should be capable of operating on the high seas, even torpedo boats.

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40 Max Plüddemann, Konteradmiral z. D., Modernes Seekriegswesen (Berlin: Ernst Siegfried und Sohn, 1902), p. 142.
Tirpitz was restricted by funds and in order to obtain such a fleet other areas had to be—and were—neglected. To Tirpitz the fleet was more than a naval weapon, it was a political weapon to be used to force concessions from Britain. Only a high seas fleet would be a threat to Britain; coastal defense weapons would not. The High Seas Fleet was decided upon by Tirpitz and its completion was relentlessly pursued by him. Wilhelm, who had a love-hate relationship with Britain, approved.

One of Tirpitz’s concessions in order to obtain the passage of the 1898 Navy Law was a clause that stipulated that no new taxes could be incurred to finance the fleet’s build up. Tirpitz and his staff in the Reichsmarineamt thought they had gauged the planned build up of the fleet to the “expected growth” of the German economy and they hoped the fleet “would create increases in revenue sufficient to avoid the introduction of new taxes.” During the first few years the Reichsmarineamt had little difficulty in keeping within its budget limitations. As Tirpitz realized, “Naval shipbuilding is applied tactics, but it is also at the same time a money question. If Germany was to have a useful fleet, we could not allow ourselves any large unnecessary expenditures at all.” True to his word Tirpitz practiced economy. Then, in 1905, Britain launched H. M. S. Dreadnought, whose appearance simultaneously made all other battleships and

41 Hubatsch, Admiralstab, p. 87.
cruisers obsolescent and significantly increased the cost of shipbuilding.

All Tirpitz's calculations were thrown awry and he was confronted by a critical decision. Until 1905 Germany tried to hide the fact that her fleet was being built against the Royal Navy, although the British were becomingly more suspicious. If Tirpitz reacted to the Dreadnought by building German dreadnoughts, Britain would realize that the High Seas Fleet was being built to challenge her. Conversely, if Tirpitz did not build dreadnoughts, the High Seas Fleet would be technically inferior to the Royal Navy and therefore lose its value as a political lever; Tirpitz's plans would be crushed. Tirpitz must have realized the consequences of higher construction costs; conflict with the Reichstag.

After weighing these factors, Tirpitz chose to take up the British challenge and build dreadnoughts.

Germany needed increased naval budgets to keep pace with Britain in technical development. In 1906 Tirpitz approached the Reichstag with a request for additional funds. A determined Tirpitz "could not help asking the

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42 Tirpitz, Memoirs, in 177; Berghahn, Approach of War, pp. 72-84, and "Der Tirpitz-Plan," Marine und Marinpolitik, pp. 98-99; Peter-Christian Witt, "Reichsfinanzen und Rüstungs- politik," Marine und Marinpolitik, p. 150; and Padfield, Naval Race, p. 112.

Reichstag for the increased financial means necessitated by
the transition to the dreadnought class which we were com-
pelled to build...." He assured this body that his latest
request would last for a good many years. He little realized
how soon these funds would be used up in the dreadnought
race with Britain.

3. The Call for Submarines:
Early Criticism of
Tirpitz

One of the first challenges to Tirpitz's naval policy
appeared in 1904. The commander-in-chief of the naval base
at Wilhelmshaven, Admiral Felix Bendemann, stated in a
memorandum that because "England's naval prominence is so
great...Germany could never consider the possibility of
overtaking her." Germany, he felt, should be satisfied with
completing the Navy Law of 1900 and forget about the offen-
sive use of the fleet and concentrate on coastal defense. If
war broke out, fast steamers should be sent on the high seas

44 Tirpitz, Memoirs, I: 256.
45 Berghahn, "Der Tirpitz-Plan," Marine und Marinepolitik,
pp. 98-100, and Approach of War, p. 67. See especially chp.
4 about pressure on Tirpitz to keep his budgets reasonable;
Witt, "Reichsfinanzen und Rüstungspolitik," Marine und Marine-
politik, pp. 298-99; Tirpitz's financial difficulties were
compounded by the 100% profit made by Krupp on steel for
the Navy. Attempts by Tirpitz to audit Krupp's books failed.
Cited in William Manchester, The Arms of Krupp, 1587-1960
to wage a commerce war. During the Dogger Bank Crisis in 1904 a general feeling of uneasiness spread through the line officers, many of whom feared a surprise attack by the British. After the crisis subsided Wilhelm appointed a committee to investigate how the Navy's preparedness might be increased. In December 1904 the results were drawn up in a memorandum by Kapitän zur See August von Heeringen, Tirpitz's own choice as his successor and his "most trusted colleague." The memorandum questioned Tirpitz's entire naval policy. The German Navy, it stated, should be prepared for the present, not the future. Stung by what he must have considered a betrayal, Tirpitz replied:

Since 1898 we have done our utmost to drive the fleet program forward; the navy laws, the highest possible estimates, postponement of coastal fortifications, curtailment of our overseas service, limitations on the number of gunnery practice ships, torpedo training and experimental ships, etc., etc., all prove this. The concentration of our resources on one purpose has been fought through against the resistance of the entire navy.

These memoranda and Tirpitz's own admission show that a large segment of the Navy opposed Tirpitz's naval policy for

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various reasons. This opposition fell into two categories: those who felt Tirpitz was emphasizing the wrong strategy and those who believed Tirpitz's emphasis on battle ships and battlecruisers neglected other technical developments. Both groups charged the Navy was weak and unprepared for war. Tirpitz admitted this. Although neither memorandum cited Tirpitz for overlooking submarines, it is probable that the submarine was one of the weapons demanded for coastal defense and better preparedness.

Another early demand for submarines came not from the Navy, but the Reichstag. During a meeting of the finance committee of the Reichstag in 1905 Matthias Erzberger broached the issue to Admiral Tirpitz. Erzberger charged the Navy with neglecting submarine development in an "inexcusable manner." As a matter of fact, he cried, the Navy had ignored their construction altogether. He asked if the Navy was aware of French researches. If need be, could the Navy proceed rapidly enough to catch up? Tirpitz, who knew the finance committee would be impressed by monetary arguments, replied: Submarines are only suitable for harbor defense, it is better if foreign navies sacrifice their money and manpower on such researches." Erzberger, however, was not the only Reichstag member concerned about Germany's lack of submarines. A small group of delegates continually clamored for the Navy to begin research, but the Reichs-
marineamt and Tirpitz turned "deaf ears" to their pleas. In the opinion of one observer, Tirpitz and the Reichsmarineamt "only had an understanding for large battleships." Opposition to Tirpitz's program never ceased. In 1907, with the publication of Welche Seekriegen-Rüstung braucht Deutschland? by Karl Galster, the opposition became public. Galster, a retired Vizeadmiral, disapproved of the direction which Germany's naval policy had taken under Tirpitz. He readily admitted that a modern fleet had to have battleships and armored cruisers, but a fleet based exclusively on this type would be ineffectual against a close blockade such as the Royal Navy might impose. Britain, he wrote, had too great a naval superiority over Germany. In war with Britain the fleet might keep the Royal Navy occupied for awhile, but would never be capable of bringing about a decision in Germany's favor. As an alternative to the High Seas Fleet, Galster recommended the use of weapons of the small war (Kleinkrieg). These included armored cruisers, cruisers, torpedo boats, mine ships and submarines. All could be used


together or independently and cruisers could conduct a commerce war. All, he pointed out, were inexpensive to build.

Submarines, Galster explained, would be used for coastal defense, forcing a blockading squadron farther out from Germany’s coast. Submersibles, like those in France, could be sent to the North Sea to attack enemy warships—if the weather permitted. Galster refuted Nautilus’ claims that submarines were valueless. Would two old sea powers like France and Britain, who had spent money and lost naval personnel, develop a “weapon of hopeless inefficiency?” The answer was, no. Submarines were improving technically and their operational radius was increasing. Germany, he suggested, should build sixty submarines “after a usable type has been found.” Thirty would defend the Baltic and North Seas, and thirty should be available for offensive use in the North Sea. Galster thought the entire western Baltic could be defended by submarines and torpedo boats. The brunt of the naval effort would be shared by these two naval vessels. Together they would whittle down the enemy fleet until its strength was equal to Germany’s. Then the fleet would have a more favorable chance of winning a battle.

But, he cautioned, the submarine's value should not be overrated; it would not entirely replace the battlefleet, only supplement it.

Galster urged the Reichsmarineamt to begin building submarines to alleviate the shortage. In comparison to Germany, by 1904 every major naval power had begun constructing and experimenting with submarines. Germany had delayed experimenting until 1907 and had not even included funds for submarines in the naval budget until 1905. Submarines, Galster continued, were inexpensive to build, and thirty defensive submarines (which cost less because they were smaller) would not be a financial burden. Submarine crews should be formed and quickly trained. Germany, he advised, should begin taking steps to protect her own ships and harbors. Summing up his views on the submarine, Galster stated that even if submarines did not win command of the sea, they would at least make it dangerous for fleets operating in the North Sea.

Tirpitz was not at all pleased with such open criticism of his naval policy, especially from an ex-naval officer. He


53 Galster, pp. 35-36, 32. Galster continued to criticize Germany's naval policy, writing numerous pamphlets and articles.
did not have kind words to say for Galster, who he felt was

...an Admiral known throughout the Navy as a crank (Sonderling), who in 1908 had taken a position against the construction of battleships—in his opinion worthless—in a brochure and in newspaper articles. No expert in Germany took seriously—or could take seriously—his plans, which, nevertheless, since they were written by an Admiral, could produce a certain influence on the common people because he apparently offered the Ei des Kolumbus for the solution of the Anglo-German tension.

Tirpitz acknowledged that "Writings such as Galster's, which reached the masses of people, helped to shake their trust in the fleet." For this reason Galster was officially censored for his outspokenness. This was done in the form of a Tirpitz-inspired article in Marine-Rundschau which refuted Galster's arguments and criticism of Tirpitz's naval program.

Galster, Erzberger, and a few others were among a minority in Germany who called for submarine construction. In 1907 there was little support for their views among the public. At that time mainly a defensive weapon, the submarine did not fit into Tirpitz's grand design as repeatedly published by Nauticus, Marine-Rundschau, and Die Flotte, and the German press. Most people were captivated by the aura of the High Seas Fleet. As for the Navy, it felt that submarines were only one of the many new developments in naval warfare that were overlooked by Tirpitz.

54 Tirpitz, Politische Dokumente, I: 51.
55 Fernis, p. 67; and Herwig, German Naval Officer Corps, p. 27.
After World War I Lothar Persius, an outspoken critic of Tirpitz's pre-war policy, claimed that a "foresight of what the submarine could accomplish was not exhibited by Tirpitz." Later Persius accused Tirpitz of fighting all submarine construction "hand and foot." To what extent were Persius' charges valid? Was Tirpitz aware of the submarine's potential value? How did the submarine fit into his plans? Why did he delay building submarines?

Up until 1908 Tirpitz either refuted all criticism of his submarine policy or simply ignored it. On 11 May 1904 the Deputy Chief of the Naval Staff, Vizeadmiral Dick, appeared before the Reichstag, perhaps on request from Tirpitz, who might have needed some support against attacks from delegates who wanted submarines. Dick told the Reichstag that submarines were valuable for "certain local and secondary purposes,...they would never cause a great revolution if the many technical deficiencies are not eliminated,...particularly the problem of seeing underwater...." The Deputy Chief endorsed Tirpitz's decision to delay building submarines. Many technical difficulties had yet to be solved, and nobody had a "real" submarine. That

same month Tirpitz expressed similar views to a Russian representative who was in Germany negotiating with Germaniawerft for the construction of three submarines for the Russian Navy. Even after he allowed Germany to build submarines, Tirpitz adhered to the same views.

In the early years of his naval career Tirpitz had been an influential figure in torpedo development in the German Navy. He recognized the threat torpedoes represented to ships and was an enthusiast of the torpedo boat. Tirpitz must have been aware of the submarine’s potential value to deliver torpedo attacks. Persius’ charge that Tirpitz failed to perceive the submarine’s value as a weapon was too simple a reason for Germany’s delay in submarine development. There were other considerations that determined Tirpitz’s actions.

Tirpitz claimed that he learned more from his experience with torpedoes than just their value as a weapon. He formed ideas on what manner new developments should be introduced into the Navy. Submarines were no different than torpedoes in this matter. In his opinion new inventions should not be adopted until proven successful. One should wait until a new invention proved itself satisfactory and not before. Then,

60 Fernis, p. 29; Persius, Tirpitz, der Totengreber, p. 8. On 7 November 1905 Tirpitz told the Reichstag that as far as submarine development was concerned he was “no enthused beginner.”
once its operational potential was recognized, it should be energetically developed. Tirpitz disapproved of the manner in which General Albrecht von Stosch, commander of the Naval Department of the War Ministry from 1871-1883, handled the torpedo's development. The torpedo, Tirpitz declared, had been adopted by the Navy before it was perfected and when it was still dangerous to those firing it. "People were often too optimistic about it, and, as is often the case with new weapons, had anticipated the change before the new idea was really practicable." Caution was more beneficial. By adopting this philosophy, Tirpitz felt he created a "first class navy with our limited means in the short time instead of a museum of experiments."

Tirpitz's cautious research and development policy slowed German submarine development. In his memoirs Tirpitz repeatedly drew attention to his cautiousness as an important factor in Germany's late start in submarine construction. He mentioned his cautious policy to Admiral John Jellicoe in a letter dated 31 January 1914. Tirpitz offered his sympathy to Jellicoe for the recent loss of the British submarine A-7 and took the opportunity to account for Germany's

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Tirpitz, Memoirs, I: 46-48, 179-80. "It was very often a difficult part of my duties to prevent myself,...from getting agitated by the impatient throng of inventions which came rushing in from all sides during this epoch." See also David Woodward, "Admiral Tirpitz," History Today XIII, (August 1963), pp. 548-55 for Tirpitz's early naval career.

Tirpitz, Politische Dokumente, I: 404-05, letter from Tirpitz to Jellicoe in English, 31 January 1914.
late start in submarine construction. He explained that

On account of our compulsory service I have from the
beginning been anxious about the problems of safety
with submarines; this has been one of the reasons I
have been waiting rather long—comparing with other
navies—before taking their building seriously in
hand.

Other sources verify Tirpitz's claim of cautiousness.

In April 1907 Korvettenkapitän Wilhelm Widenmann, recently
arrived in London to assume the post of German naval
attache to Britain, talked with Captain Reginald Bacon, who
was himself deeply involved in British submarine develop-
ment. They compared submarine development in their respect-
ive countries, with Bacon emphasizing the advantage Britain
held because the Royal Navy had already incorporated sub-
marines into the fleet. In Germany's defense Widenmann noted
that Admiral Tirpitz had demanded from the start of sub-
marine development that Germany have high seas boats with
good sea worthiness, a large operational radius, safe
navigation, and diesel engines for safety from engine ex-
plodion.

Safety was not the only factor Tirpitz took into con-
sideration in the development of the submarine. Would the
submarine fit into his ideas of naval warfare? Tirpitz, who

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Wilhelm Widenmann, Marine-Attache in der kaiserliche-
deutschen Botschaft, 1907-1912 (Göttingen: Musterschmidt
Wissenschaft Verlag, 1952), p. 60, also Fritz Otto Busch and
Georg Günther von Forstner, eds., Unsere Marine im Weltkrieg
(Berlin: Brunner-Verlag, 1934), p. 25. The editors, both
once involved with German submarines, noted that the German
Navy closely followed research in other navies but did not
begin submarine experiments "until they were completely
safe operationally and militarily useful."
was offensive-minded, desired Germany's submarines to be able to operate on the high seas in support of the fleet like torpedo boats.

While on his way to Russia to help that country build submarines in 1904, Simon Lake, another submarine designer, met with Admiral Tirpitz. During their discussion, which naturally centered on submarines, Lake dwelt upon the defensive value of the submarine. "'Ah yes," Tirpitz reportedly replied, "'very good indeed for defense. But the boat would also be good for offensive purposes, and that is what we shall want her for..." Tirpitz wanted submarines for offensive use and as long as the submarine's operational radius restricted it to coastal waters he "refused to throw away money" on their construction. Elaborating further, Tirpitz stated that

in spite of the financial restrictions imposed upon me, I want as far as the limits of our technical production would permit.... The question as to how the submarines were to be used could not be answered practically until the instrument itself was there. The immediate question...was to construct boats which could operate overseas, and, as soon as this was possible build as many of these as we could.

Tirpitz's supporter's believed he acted wisely by delaying submarine construction. By doing so he saved Germany money and kept her from drifting in the wrong direction like

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64 Lake, Autobiography, p. 209.
65 Hassell, Tirpitz, p. 181.
France. As long as the submarine remained in "Kinderschuhen," they argued, his policy was the correct one.

These reasons as stated by Tirpitz and his supporters, while valid, were only half-truths. Often overlooked is the fact that it was convenient for Tirpitz to hide behind excuses of technical inferiority, safety, and military uselessness, which, to be sure, did exist. These excuses, however, hide his real objections. In reality, Tirpitz thought only about the completion of the High Seas Fleet. Nothing must interfere with this. This did not mean that Tirpitz was unaware of or ignored new technical developments such as the submarine, but, until submarines could fit into his overall program he rationalized that to spend time and precious money on their development would retard and might completely interfere with the completion of the High Seas Fleet. When the fleet was completed, Germany could concentrate on new technical developments. Until that time these considerations had to wait.

In a note to the future Chief of the Naval Cabinet, Georg Alexander von Möller, at the time aide-de-camp to the

67 Statement by Ernst Basser mann, leader of the National Liberals, in the Kreuzzeitung, 29 November 1907. Cited in Fernig, Flottennovellen im Reichstag, p. 72.
68 A recent German naval historian believes that "Even if nothing specifically significant emerges from the documents utilized by us, one must assume that Tirpitz and his assistants were familiar with" new developments and theories of war which were presented in the "established literature of international naval writings and naval handbooks." Jürgen Rohrer, "Kriegsschifffbau und Flottengesetze um die Jahrhundertwende," in Marine und Marinepolitik, p. 212.
Emperor, on 3 February 1905, Tirpitz mentioned this point. "The question of the technical development of the fleet is entirely of a secondary nature. The central point for ourselves lies, it is clear, in ships of the line and torpedo boats." This was the cause of opposition from line officers and those of the Naval Staff to Tirpitz's policy. They wanted the Navy "complete in all its details and...so ready for war, that all differences in strength would be made good." Tirpitz, on the other hand, wanted "all the essential elements ready, and as regards secondary matters" trusted "more or less to improvisation if war came before the final development of the fleet."

Tirpitz was a shrewd person. As Gerhard Ritter said, "everything he did and planned was considered with the greatest care...." He was capable, and willing to play politics if results furthered the completion of the High Seas Fleet. In a conversation with Ernst Bassermann and

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Tirpitz, Politische Dokumente, I: 15. Tirpitz to Müller, 8 February 1905. See also Kapitänleutnant Schaper's article in Die Flotte (April 1912), pp. 64-65. At the turn of the century Germany had the idea of building a battle fleet. The battle fleet and its escort, the torpedo boat, were more important than costly research into submarines. In addition, the naval leadership had designated the submarine as a high seas vessel, yet, at the time, the high seas boat was not yet developed.

Reinhard Scheer, Admiral, Germany's High Seas Fleet in the World War (New York: Peter Smith, 1934), pp. 17-18; see also Berghahn, "Der Tirpitz-Plan," Marine und Marinepolitik, p. 106.

Ritter, Sword and the Sceptor, II: 139.
others Tirpitz explained that he could not afford to risk the losses in manpower—let alone in finances—to German seamen because of submarine disasters during the submarine's experimental stage as was the case in France and Britain. He would not risk making the "young naval politics of the German Empire unpopular in the Reichstag" due to mishaps. Anything that might tarnish the Navy's image was avoided.

Reichstag delegates, especially those on the budget committee, were annually invited for an inspection tour of the High Seas Fleet. They were treated to a cruise, briefed on gunnery exercises and tactical evolutions, and generally shown the finer qualities of the fleet. Delegates could not help but be impressed. One could imagine, though, their reaction to an inspection tour of a fleet composed of vessels of Galster's "small war."

4. Confrontations with Chancellors Bülow and Bethmann Hollweg and the Navy

By 1907 Germany's growing fleet was the significant cause of tension between Germany and Britain. Attempts were

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made during the summer of 1908 to ease Anglo-German relations, but since this demanded a reduction in German naval construction, Wilhelm opposed any agreement that included this. The British, on the other hand, would only accept an agreement that included a decrease in German capital ships. Although maintaining his former hard-line attitude in the conduct of foreign affairs, Chancellor Bernhard von Bülow began to doubt the wisdom and correctness of Germany's naval programs, and in July 1908 he suggested to the Emperor and Tirpitz that perhaps a slow-down in the rate of capital ship construction would help ease relations with Britain. Wilhelm, however, refused to listen.


ments, I: 84-85, Tirpitz to Müller, 17 July 1908, and Müller to Tirpitz, 31 August 1908.
Bölow was forced to conceal his true feeling, but as the weeks passed his doubts increased. In September he summed up his thoughts in a letter to Otto Hammann, Press Chief of the Foreign Office. Bölow felt the emphasis of Germany's naval construction should be switched from capital ships to the defensive (coastal defense, submarines, mines, etc.), thus removing the "chief basis" of tension with Britain. Basically Bölow suggested the same program advocated by Karl Galster the previous year. But it was only after Wilhelm's Daily Telegraph interview in October worsened Anglo-German relations that he directly challenged Tirpitz's naval program.

Tirpitz replied to Bölow's challenge by launching into a tirade against the small war ideas of Galster. The fleet was being built against the Royal Navy. A strong battlefleet, by its very existence, prevented a British attack and consequently maintained peace, and protected overseas trade and the coast. Only a strong battlefleet, Tirpitz repeated, could do this. The "Galstersche Kleinkrieg" could not.

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77 Cited in Tirpitz, Politische Dokumente, I: 51, and GP, XXIV: 162, Bölow to Hammann, 19 September 1908. Berghahn claims that Bölow's doubts began as early as 1907, when he asked Tirpitz when the fleet would be ready so that the "intolerable political situation is ended." Galster's small war views were adopted then. "Der Tirpitz-Plan," Marine und Marinepolitik, p. 105.


The debate between Bölow and Tirpitz continued into January 1909 before finally ending. On one side Bölow argued for better coastal defense, more mines, and "the establishment of a strong submarine fleet," rather than a large surface fleet based on battleships. Tirpitz, and the other hand, remained steadfast in his opposition to the chancellor's views. He claimed that the Navy had pursued submarine development as far as technically possible. No other navy possessed a submarine suited for operation in the North Sea. Tirpitz, however, preferred a battlefleet over a submarine fleet. He thought in terms of politics and power, and a fleet of submarines would not produce the same effect as his "risk" fleet and would actually decrease Germany's alliance value. "Without a battlefleet Germany would be defenseless and open to all types of insults by Britain...."

Tirpitz conceded nothing in his naval program to Bölow. He made it perfectly clear that if finances were cut, the small war weapons would suffer. The fleet came before all else, and submarines, as part of the small war weapons, were not included in Tirpitz's plans. Although he mentioned the supposed excellent condition of Germany's submarine, this seemed more an attempt to appease Bölow's fears than a belief in the submarine's value as a weapon. At the beginning of

Ibid., pp. 38-40, 51-55; Politische Dokumente, I: 100-01, 104-09, Bölow to Tirpitz, 25 December 1908, and Tirpitz to Bölow, 4 January 1909; also Memoirs of Prince Bölow, II: 355-60. At that time the Navy only had two submarines, U-1 and U-2. Ten others were under construction.
1909 submarines had not yet reached the level of technical development that enabled them to cooperate with the High Seas Fleet. Submarines were still basically a defensive weapon and, in Tirpitz's view, a weapon for an inferior naval power, unlike Germany which, thanks to his efforts, had risen by then to a much higher level.

Bölow was not alone in voicing opposition to Tirpitz's program. Once again discontented naval officers at the front line bases in Kiel and Wilhelmshaven and in the Naval Staff protested. In late December 1908 they expressed their views in two petitions which were presented to the Emperor. As in 1904-05 the issue was war preparedness. The petitions mentioned the "considerable doubt with regard to the correctness of the State Secretary of the Imperial Navy's driving manner for the further development of the fleet as the general Wahrkraft of the Reich against attack from sea."

Tirpitz was painfully surprised, and perhaps embittered by this internal naval opposition to his fleet program. Determined to see his program through to completion, opposition or not, he refused to give in. In this endeavor he had the complete support of Wilhelm, who quickly silenced the naval opposition, and other top naval leaders such as the

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82 Berghahn, Approach of War, p. 83.
Chief of the Naval Cabinet, Admiral Müller, whom Bülow described as being a "satellite" of Tirpitz's at that time.

As long as Tirpitz was supported by Wilhelm his position was secure against all opposition. However, he did use the threat of resignation in his struggle with Bülow. He knew that Wilhelm would never allow his resignation and if forced to choose between himself and Bülow, would most certainly chosen him. After the Daily Telegraph affair Bülow fell out of favor with the Emperor, who felt Bülow had not adequately defended him afterwards in the Reichstag. Subsequently, whenever Bülow raised the naval question during his last months in office, Wilhelm acted extremely annoyed and cut Bülow short.

Tirpitz emerged triumphant, if not happy, from his confrontations with Bülow and the Navy. On 17 March 1909 he announced his victory and determination. He told the Reichstag that "The conduct of a small war is absolutely not possible without a battlefleet." Weapons of the small war were not the answer. If Germany only had submarines, she would entice the rest of the world to declare war on her. Then Germany "would have 40 submarines whose only value was scrap iron."

85 Hassell, Tirpitz, p. 182.
In July 1909 Bülow resigned as chancellor after his financial reform program was defeated in the Reichstag. His successor, Theobald von Bethmann Hollweg, was determined to end the Anglo-German naval arms race and, as Volker R. Berghahn states, pave the way for a "bridge building operation" in German domestic affairs with an Anglo-German agreement. Attempts at securing an agreement failed in 1909, 1910, and again in 1911. During the summer of 1911 the Agadir Crisis ruined any chance of an agreement. Britain hardened its attitude towards Germany and made it perfectly clear that she stood solidly behind France. Lloyd George's Mansion House speech on 21 July increased the tension to the ultimate. War seemed imminent. Tirpitz sought to take advantage of the aroused state of opinion in Germany and introduce a new naval supplement bill, and in late summer he and his staff began preparatory work on it. The nature of Germany's naval law was such that from 1912 to 1917 the rate of capital ship construction dropped to two ships per year. Afraid that the Reichstag would become accustomed to lighter naval expenditures during this period and would be reluctant to return to the three ship rate in 1918, Tirpitz intended to fill the gap with a new bill. This meant six additional ships.

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Tirpitz, Politische Dokumente, I: 200-01, Tirpitz to Canella, 3 August 1911.
Bethmann Hollweg feared that a naval bill of this magnitude would have disastrous consequences for an agreement with Britain. He also feared domestic repercussions. The chancellor informed Tirpitz of his feelings but failed to impress the State Secretary, who believed that determination and a strong will were needed to guide Germany through the crisis. Bethmann Hollweg's strongest ally was State Secretary of the Imperial Treasury, Adolf von Warmuth. Warmuth opposed the new naval bill, but for different reasons. The Army was contemplating an expansion that would be costly and Warmuth felt strengthening the Army was more justified than building more battleships for the Navy. His opinion suggested a gradual change of feeling in Germany. Many had come to the conclusion that Germany's naval policy was bankrupt in both foreign and domestic affairs. Germany was returning to a continental policy.

On 9 October Warmuth and Tirpitz met to discuss the funding of the proposed naval bill. Tirpitz planned to finance the bill mostly through loans. The Secretary of the Treasury, however, had mended Germany's finances and was not eager to finance a large navy bill. Warmuth told Tirpitz that the entire bill must be supported by new taxes because there were no funds available to cover the cost. Such taxes

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87 Ibid., p. 247, conversations between Tirpitz and Bethmann Hollweg, 31 August and 1 September 1911; also Widenmann, Marine-Attache, p. 187.
88 Berghahn, Approach of War, pp. 112ff.
were not politically possible. Wermuth's position was a serious setback to Tirpitz, and he must have realized about then that he would have difficulty achieving his demands.

Peaceful relations with Britain were possible, Bethmann Hollweg believed, if Germany "would not now undertake new construction in Dreadnoughts." A few months later he summed up his feeling on the matter at a meeting with Müller and the Chief of the Civil Cabinet, Rudolph von Valentini. "The Navy should certainly receive more money for men, submarines, etc., only no more Dreadnoughts." Prevention of the entire proposed increase in battleships was beyond Bethmann Hollweg's power and he realized that his continued resistance to the bill could only lead to his dismissal by Wilhelm. He had to be content with a compromise, as did Tirpitz. Instead of six ships the Navy received only three, alternating from two to three every other year.

Once again naval opposition to Tirpitz's new naval bill surfaced. As in 1908 and earlier the issue was war preparedness. The line officers had no desire to be cannon fodder for the Royal Navy. In the beginning in 1898 the officer corps accepted Tirpitz's "Risk Theory" and contentions that it was necessary for the Navy to be in a state of inferiority

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89 Tirpitz, Politische Dokumente, I: 226-27, conversation between Tirpitz and Wermuth, 9 October 1911; GP, XXXI: 35-42, Wermuth to Tirpitz; for some of the financial problems facing Tirpitz see his Memoirs, II: 391-93.


91 GP, XXXI: 31.
for a few years. However, this period was being prolonged due to the determined British reaction to Germany's naval program, and the "danger zone" still existed. The line officers demanded this situation be corrected.

One of Tirpitz's closest advisors in the Reichsmarineamt, Admiral Eduard von Capelle, opposed the introduction of a new naval bill at this time. Instead he suggested postponing it until the 1913 budget. Capelle also suggested that Germany's naval program should be cut back. The "course of the Moroccan Affair," he stated, "intimated a fiasco of our entire naval politics." It would be better if during the next three years the Navy underwent a further development in other areas such as torpedo boats, submarines, completion of the Heligoland defenses, and widening of the Kiel Canal. Capelle's proposals were basically those of the line officers, but Tirpitz flatly rejected them. Tirpitz offered his standard answer: the fleet was necessary, its strength in regard to Britain was the important thing. "The line officers are stupid... (Die Front ist dumm)." They only viewed events from a narrow perspective, not from an overall view like his.

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92 Tirpitz, Politische Dokumente, I, 198-99, undated report from the German naval attaché in Rome, Korvettenkapitän Werner Freiherr von Rheinbaben; Berghahn, Approach of War, pp. 11-12; and Persius, Tirpitz, der Totengräber, passim.

93 Tirpitz, Politische Dokumente, I, 207, Capelle to Tirpitz, 17 August 1911.

94 Ibid., p. 210, Capelle to Tirpitz, 11 September 1911.

95 Ibid., p. 212, Tirpitz to Capelle, 13 September 1911.
Leading the naval opposition this time was the Commander-in-Chief of the High Seas Fleet, Admiral Henning von Holtzendorff, whom Tirpitz considered a very willing spokesman of the line officers. In early September Tirpitz summoned the naval attache in London, Korvättenkapitän Widenmann, to Germany to lend support to his arguments for a new bill. A meeting took place on 5 September at Kiel on board the royal yacht, Hohenzollern. Besides the Emperor, Tirpitz, Bethmann Hollweg, and Widenmann, other leading naval officers were present. Holtzendorff took the opportunity to present the line officers' views to the chancellor and Emperor. A new naval bill was foolish, and Holtzendorff advised against it. Further increases in capital ships would produce a situation "dangerous to peace."

Fill in the gaps created by the navy laws—increase the Navy's war preparedness. More preparedness was needed, not more battleships.

Tirpitz did not receive all that he wanted in the 1912 naval supplement bill. Yet, even before he realized the bill would be cut, he made provisions for meeting some of the demands of the line officers. Included in the 1912 bill was the establishment of four submarine flotillas, a total of seventy-two submarines.

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96 Ibid., p. 215; Widenmann, Marine-Attaache, p. 188; and GP, XXXI: 123.
97 See Hurd and Castle, German Sea Power, pp. 337-44.
As late as 1911, one author claims, Tirpitz "remarked that he was not at all certain that submarines were an essential part of Germany's naval programme." What had happened? In 1911 the diesel engine was perfected to a degree which allowed its use in submarines, immensely improving their military value as Tirpitz recognized. As technology improved, he said, it became necessary to "change the basis of the law for the navy." Tirpitz stated in his memoirs that "the long-range submarine could not be developed more rapidly than the engines permitted." Once the engine was improved and as soon as the "U-boat could be used in war...I applied all my energy" to the matter.

Under scrutiny Tirpitz's claims seem dubious. He did not suddenly recognize the new value of submarines. For him the fleet was still the chief naval weapon of Germany and the only one capable of influencing Britain. After fourteen years of hard work and struggle in pursuit of the completion of the High Seas Fleet, Tirpitz would not even implicitly question its value. This would have been tantamount to a confession that his naval policy had been wrong. The heart of the 1912 bill was the increase in capital ships.

Tirpitz's statements show that he was more interested in

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this aspect of the bill than in any other. It just so happened that he did not receive all that he asked for. Was, then, the inclusion of four submarine flotillas a concession to the line officers? When observed more closely it only appears partly so. Internal naval opposition was approaching a dangerous level. Tirpitz must have wondered how long before it had serious effects; only Wilhelm's intervention had quelled the 1908-09 opposition. The diesel engine assured Tirpitz that the submarine would be a much improved weapon capable of operating offensively on the high seas and no longer a waste of precious naval funds. Here was an opportunity to meet some of the line's demands and also have a valuable weapon that supplemented the fleet. In the words of a recent historian, Tirpitz wanted only to silence "his critics by implementing measures to enhance the fleet's preparedness for war." This improved preparedness was offensive not defensive.

That Tirpitz was under pressure from inside and outside the Navy was evident from Nauticus. In 1911 the journal came to his defense. To those critics of Tirpitz's naval policy who felt that the "Navy [Tirpitz] could have been able to shape a much better fleet for the money if they [Tirpitz] had built more submarines and less battleships," Nauticus refused to answer, except to note that this was a

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"controversial question." However, the "entire overwhelming number of naval officers," it claimed, agreed with Tirpitz's 101 program. Those who knew the real facts were not deceived.

Before the war submarine advocates primarily fell into two categories, political and military. Chancellors Bülow and Bethmann Hollweg had to deal with the political repercussions of the fleet in foreign and domestic affairs; tension with Britain and financial difficulties at home. It was politically expedient for them to seek an alternative to the fleet that would alleviate these problems. They endorsed the small war theory of Galster. Anything that would not disturb relations with Britain or was inexpensive was supported. Submarines, as part of the small war weapons, offered protection and were inexpensive. Neither of the chancellors was a naval expert and probably knew very little about the submarine's technical qualities and fighting ability. Their support for the submarine was motivated by a desire to solve the issues confronting them, not their belief in the submarine as a weapon.

Inside the Navy submarine supporters were predominantly at the front line bases and in the Naval Staff and, later, among disillusioned officers in the Reichsmarineamt. They urged submarine construction as part of the completion of the Navy's technical build up, which would increase its pre-

_Nauticus_, 1911, p. 288.
paredness for war. Submarines were not seen as an alternative to the fleet, only a supplement. Both groups, naval and political, wanted submarines for different reasons, but usually only during times of crisis were these feelings voiced.

Nobody, except possibly Karl Galster and a few others, believed that submarines would be the dominant naval weapon of the future. Even Galster warned against relying solely on them. Submarines were only one of the many weapons of the small war endorsed by political leaders and demanded by naval officers. Although acquiring a higher priority than previously in 1912, submarines were just another auxiliary vessel like torpedo boats. The High Seas Fleet was still the main naval weapon.

Even if Tirpitz wanted to shift the emphasis of Germany’s naval construction from battleships to small war weapons, could he have done so? First of all, Germany’s public must be considered. There is no evidence that the public was disillusioned with Tirpitz’s naval program. Any slow down or change in the program would have appeared as a surrender to Britain, a sign of weakness on the part of the government, and would not have been easily accepted by the public. Also, it is doubtful that big industry, which would have been sorely affected, would have agreed to a slow down in construction.

Supposing that public opinion could be ignored in a mon-
archy, and the wishes of big industry overlooked, could that also be said of the Emperor? Wilhelm, even more than Tirpitz, adamantly opposed any alteration of Germany's naval program, especially if designed to reduce British antagonism. He viewed all attacks on the Navy as a personal affront. No change could have taken place without his approval, which he would never have given. Wilhelm, not Tirpitz, controlled the build up the fleet. Tirpitz organized the details, worked out the budgets and technical aspects, set up the programs for construction, and pushed the bills through the Reichstag. But Tirpitz was only a minister, an instrument of the Imperial Will. Although a very strong and independent minister, Tirpitz was, nevertheless, only a servant of the crown. The programs were Tirpitz's, the fleet was Wilhelm's. If Tirpitz refused to build a fleet of battleships, he could easily be replaced by another who would. During this period navies were judged by their battleships, not their submarines, and Wilhelm took more pride in his battleships. They were majestic, powerful, and awe-inspiring, and no doubt he related to this. One does not picture Wilhelm at the head of a Navy of torpedo boats, mine craft and submarines limited to coastal defense. The Kleinkrieg found no supporter in Wilhelm II.
CHAPTER III

THE GERMAN SUBMARINE

1. German Submarine Construction

Private companies built Germany's first submarines on their own initiative, not on orders from the Navy. A small submarine, designed by a small naval officer, was built at the Howaldt yard at Kiel in 1902. However, there was no encouragement from the Reichsmarineamt to continue research, so Howaldt abandoned the project. In 1903 the engineers at Krupp's recently acquired Germaniawerft shipyard decided to experiment with the submarine, and, despite Tiroitz's opposition, built a very small submarine, the Forelle. Although Wilhelm personally inspected the boat and Prince Heinrich and some naval officers participated in some diving maneuvers, official backing was not given. In 1904 submarine development at Germaniawerft received a boost from a foreign source. The Russian Navy ordered three submarines for use in the war against Japan, but the three Karp class boats were completed too late for use in the war. In 1902 a French engineer, R. d' Equivelley, who had worked on French submarines, offered his services and knowledge to Krupp, who immediately employed him. D' Equivelley directed the construction of Germaniawerft's
submarines, which may account for the similarities to the French design.

After years of observing the progress of submarine development in the navies of Europe the Reichsmarineamt finally decided to begin its own experiments with the submarine. It is possible that Tirpitz responded to some prodding in 1904 when he initiated discussions with Germaniawerft. Prince Heinrich, who had seen Forelle, sent reports to the Reichsmarineamt about British submarines. These reports, plus possible pressure from within the Navy and from Wilhelm, may have induced Tirpitz to act, for he personally wanted to wait another two years before beginning submarine construction. In mid 1904 the Reichsmarineamt initiated discussions with Germaniawerft for construction of a submarine. Germaniawerft’s experience in submarine construction gave it a definite advantage over the rest of the German shipyards and was probably the deciding factor in the decision to award it the contract. Orders for a gas engine and a periscope went out to the Körtino machine factory and the optical industry. The keel of Germany’s first submarine was laid in February 1905. All of this activity evidently took place unofficially, for the funds were not approved until November 1905.

103 Teichel, Unterseeboote auf Germaniawerft, p. 5; Manchester, Arms of Krupp, p. 255; Jameson, Most Formidable Thing, pp. 79-80; and Brassey’s Naval Annual 1902, p. 152.

104 RMA Zentralabteilung, Band XVII. Tirpitz an Prinz Heinrich. 6.5.1904 (Abschrift); cited Hubatsch, Der Admiralstab, p. 115.
Admiral Tirpitz had more confidence in Germaniawerft's work, under d' Equivelley's guidance, than in the Navy's engineers. Tirpitz, soon after his arrival at the Reichsmarineamt, found the Navy short of qualified engineers. The best naval engineers were easily enticed by higher paying industrial jobs, leaving behind a group of inexperienced and less capable engineers. It was with this group that Tirpitz sought to build up the Navy. He was forced to rely on private industry and foreign engineers perhaps more than he desired.

On 12 December 1906 Unterseeboot-Eins, unimaginatively christened U-1, was commissioned. Under command of Kapitänleutnant Böhm-Bezin, the 240-ton boat soon began its trials. At eight knots U-1 could sail 1400 miles on the surface; underwater her maximum distance was 50 miles at five knots; her top speed on the surface was 9.2 knots and underwater 8.5 knots. (This was slightly slower than the C class then under construction in Britain.) One torpedo tube was located forward and she carried three 15.5 inch torpedoes. Three officers and nineteen ratings made up her crew. However, U-1 was a submersible and all the British boats were "true" submarines.

105 Tirpitz, Memoirs, I: 168; Henry Newbolt, Submarines and Anti-Submarines (London: Longmans, Green & Co., 1918), p. 186; also Herwig, German Naval Officer Corps, passim, for the role of the German naval engineer in the Navy.


Before starting constructing of submarines Germany decided which type she she needed and proceeded to build only that type. The problems that plagued France were bypassed.

In March 1906, a little over a year later, the Imperial Shipyards at Danzig received the order for U-2. Completed in the summer of 1908, U-2 was one hundred tons larger than U-1. She had four torpedo tubes, two forward and two aft, and carried six 15.5 inch torpedoes. Equipped with a larger engine it could travel four knots faster than U-1 and one knot faster than the British C class submarines. Hermann Bauer, an early enthusiast of the submarine, and one of the few officers exposes its virtues at that time, expected to receive command of U-2. Instead he was passed over and assigned to head the new U-Boot-Wesen in the Reichsmarineamt.

In 1907 U-3 and U-4 were ordered from Danzig and completed in mid 1909. The largest order to date came in the spring of 1908 when four boats, U-5 through U-8, were ordered from Germaniawerft. Two of these were completed in 1910 and two in 1911. The size of the boats had increased to 500 tons surface displacement and 630 tons submerged displacement. The crew now consisted of four officers and twenty-four ratings.

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Shortly thereafter, in the summer of 1908, four additional boats, U-9 through U-12, were ordered from Danzig. These were comparable to the new D class British boats. Germany's submarine allotments reflected the increased construction. From a miniscule 1.5 million marks allocated in 1905 it increased to 2.5 million in 1906, 3 million in 1907, and jumped to 7 million in 1908--still a modest sum.

Germany encountered similar problems as Britain, France, and other countries with the gas engine. Detection of the submarine on the surface was easy due to the black smoke emitted by the engine; backfires produced so many gas fumes that often the "eyes of the crew became strongly pained and filled with tears." Explosions occurred, although none were serious. Conditions were generally unhealthy and when in dock the crew seldom slept on board the boat. Experiments were always in progress to develop a more efficient engine but most were unproductive.

Despite the health conditions there never existed a dearth of volunteers for service in the submarine corps.

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109 Financial figures are taken from Spindler, *Handelskrieg*, I: 152; see also Fernis, *Flottenrevellen im Reichstag*, passim.


111 Tirpitz, *Memoir*, II: 405-06.
Numerous officers and ratings volunteered. Germany shrouded the submarine in secrecy. Nauticus, which usually freely listed statistics on speed, engine size, armament, and tonnage for almost all German naval vessels, remained silent about the submarine. Its readers were told that details concerning the submarine "have not been made public." In fact, nobody was even allowed on the boats except for high ranking officers, and the crews were sworn to silence.

German submarines enjoyed a high rate of technical development. Many of the submarine's deficiencies were improved upon by German technology. For example, in 1908 the old unreliable magnetic compass was replaced by a gyro compass, which enabled more accurate underwater navigation and improved underwater attacks. Improved diving planes lessened the diving time before the war to 3-5 minutes. While some defects, as in the case of the periscope, remained, it was generally believed in Germany that despite her late start and few boats her technical superiority awarded her an advantage.

\[112\] Forstner, p. 2; Nauticus, 1908, p. 28.


\[114\] Busch and Forstner, p. 43; Spindler, Handelskrieg, I: 149, 171; Techel, Unterseeboote auf Germaniawerft, p. 46.

over her rivals. In terms of technical performance German submarines were in a class by themselves. With a thoroughness and foresight than can only be admired, the German Navy was already constructing a submarine tender when U-1 began her trials. This was years before anyone else conceived of the idea. Vulkan served a dual role as a floating dock-repair ship and salvage vessel. A combination of quality engineering, foresight and safety left Germany's prewar submarine development virtually accident-free, no slight accomplishment when one compares the results elsewhere.

It is remarkable that only one disaster marred the German Navy's record. On 17 January 1910 U-3, commanded by Ludwig Fischer, and U-1, commanded by Fritz Otto Busch, sailed from Danzig for Kiel on a training cruise. On board were future submarine commanders, officers and engineers. The submarines sailed together and alternated diving. While one boat dove the other remained on the surface to secure the area from passing ships. U-1 watched as U-3, with the junior officers and engineers making their first dive, slid under the water. Due to a faulty ventilation valve which failed to close, U-3 sank to the bottom. In a few minutes a buoy appeared. Attached to it was a telephone, a device unique to

117 Nauticus, 1907, p. 34. Britain did not build her first submarine tender until 1911, Lipscomb, p. 35.
the German and U. S. Navies, enabling the crew of the U-3 to communicate with the world above and marking the submarine's location for her rescuers. If not for a hasty attempt to raise the boat before Vulkan arrived, which resulted in the death of Fischer and two others, all the crew would have been safely recovered. Since in 1905 it had taken the French a couple of days to raise a sunken submarine during which time all those who had survived the initial sinking perished, the rescue was remarkable. In 1913 construction began on a larger and improved submarine tender, Kangaroo, which was designed specifically for use on the high seas.

The search for a more efficient engine continued in the European navies. Diesel fuel offered the best alternative to the gas engine. It was safer, healthier, emitted no visible exhaust, and was more economical, doubling the submarine's operational radius. Britain, at first, led the way, installing diesel engines in her D class boats in 1909. Germany was slower. The Maschinenfabrik Augsburg-Nürnberg (M. A. N.), encouraged by the Navy, built the first German diesel engine. In 1908 the Reichsmarineamt invited M. A. N. and four other firms to build an experimental diesel engine. After M. A. N.'s diesel engine successfully completed its tests in 1910, the

118 Busch and Forstner, pp. 39-42; Nauticus, 1911, p. 39; Talbot, Submarines, pp. 162-63; Brassey's Naval Annual 1912, p. 47.


120 Die Flotte (September 1913), p. 56; Nauticus, 1914, p. 511.
Reichsmarineamt endorsed the switch from gas engines to diesel engines. No more gas engines were ever built in Germany. On 25 November 1910 Germany’s first diesel engine submarines were ordered from the Danzig shipyard. Even though it was commonly assumed that Germany’s diesel engines were superior to those of anyone else it "still had to go through a trial and error period." The problems were not worked out until 1913.

In comparison to the gas engine boats the diesel boats were much larger—and much superior. They displaced 650 tons on the surface and 840 tons underwater; their operational radius was nearly 5000 miles; they carried an armament of nine 19.5 inch torpedoes; surface speed was 15.4 knots; and a crew of four officers and thirty-five ratings were required to operate the boat. Britain did not build a comparable class submarine until the E class in 1912. These, however, were lesser armed, only having one bow tube for 18 inch torpedoes. The crew was also smaller.

Twelve diesel engine submarines, U-19 through U-30, had already been ordered when the 1912 naval bill went into effect. Most of these were completed by the outbreak of the war. Eleven boats, U-31 to U-41, were ordered from Germaniawerft in 1912 as part of the new bill. This group was supposed to form

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the chief reinforcements for the newly formed submarine flotilla. None of these were completed before the war.

Germany's shipyards found it difficult to handle the production of the new diesel engine submarines. With the exception of U-13 through U-15, the average construction time of the gas boats was approximately twenty-six months. Diesel engine boats, on the otherhand, usually required almost three years. The engine was the significant problem. Submarine construction in Germany, said Admiral Tirpitz, "was still in its infancy" and the shipyards found it difficult to meet the new demands of the Navy. Cluttered shipyards forced a delay in orders for new boats. Because of the congestion at Danzig and Germaniawerft, the Reichsmarineamt approached other shipyards about building submarines. Weser in Bremen and Vulkan in Hamburg were reluctant, possibly because they had largely been ignored up till then and were not given a guarantee of future contracts. Both refused to establish a submarine designing department and only agreed to complete designs already prepared. Schichau refused the Navy's inquiry outright.

The ordering of sixteen boats in 1912 had virtually paralyzed the German shipyards. Only three boats were ordered in 1913, U-42 through U-44. Actually only two were built in Germany, U-43 and U-44. The other boat, U-42, was contracted

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123 Ibid., p. 420.
out to Fiat in Italy, supposedly to allow the Italians some experience in building this type of submarine but also because the German shipyards could not handle it. Needless to say, the Italians kept the submarine after the war broke out. Before the war began in August 1914 only one more boat was ordered, U-45.

2. Development of Submarine Doctrine

From the beginning Germany developed a high seas submarine fleet, and Admiral Tirpitz and his Reichsmarineamt staff would not sanction any other type. Tirpitz's offensive-mindedness and experience with torpedo boats influenced his conception of the submarine's role. He designated the submarine as a long-range weapon, operating like a torpedo boat on the high seas. In his work on the German submarine war, Der Handelskrieg mit U-Booten, Arno Spindler noted that Germany waited until the submarine had progressed enough technically to be capable of "operating on the high seas and carrying its attacks to the enemy harbors." The submarine

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offered other possibilities like coastal defense, but this type was "denounced in the Navy." This is misleading. Spindler ignored the controversy between Tirpitz and the line officers and the Naval Staff. Tirpitz did not. He recalled that "the struggle between the advocates of sea going ships and those who supported the coast-defence scheme continued through all my activities down to the building of the submarine."

The fact that Tirpitz supported the development of high seas submarines was an advantage for Germany. Only one type was built, allowing her to concentrate all her energies on developing and improving it. France built different types and Britain only small coastal boats until 1908. Germany built only high seas boats. This was a factor in the technical superiority of her submarines. One writer felt that when comparing the relative strength of the European submarine fleets the number of high seas boats was the important factor.

Despite Tirpitz's control over construction, submarine experiments were often influenced by the operational plans of the Naval Staff, which were not always in agreement with Tirpitz. In 1904-05 the war plans called for a defensive strategy against the Royal Navy until its superiority over

126 Spindler, Handelskrieg, I: 148.
127 Tirpitz, Memoirs, I: 54.
the German fleet had been reduced. This would be accomplished, explained Admiral Wilhelm Büchel in 1906, by submarines and torpedo boats. The line's initial conception of the submarine was as a defensive weapon.

Little information is available about early submarine experiments in Germany. U-1 took a 580-mile cruise lasting sixty-two hours in a test of her sea endurance and later participated in maneuvers with torpedo boats. Tests, however, were numerous. In 1908 *Nauticus* thought submarine development was approaching its final stage. Since in 1906 the conception of the submarine had changed. Submarines were no longer regarded as objects of research and had obtained a place within the ranks of a modern navy. But submarines remained a coastal defense weapon because they were not capable of operations on the high seas. The submarine's "offensive use or participation in high seas battles is a perspective not now fulfilled," said *Nauticus*, but it was expected. Technology limited the submarine's offensive potential. Underwater attacks on surface vessels seldom succeeded because of the slow speed and difficulty in navigation, for the gyro

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131 BD, VI: 127, Captain Dumas to Sir F. Lascelles, 12 February 1908; and *Brassey's Naval Annual* 1910, p. 34.
compass was not in full production until 1911. Submarines carried out the assignment of coastal defense and reconnaissance in enemy-held waters. Nauticus cautioned those who thought the submarine would cause a naval revolution to wait a little longer and advised the skeptics to recognize the submarine's value.

Very little changed during the next two years. Nauticus repeated the fact that technical limitations were the greatest obstacle submarines had to overcome. The realm of the submarine was still coastal waters. Tirpitz, meanwhile, worked at developing the high seas boat. Tests were designed with this in mind. U-3 and U-4 undertook a 540-mile trip from Cuxhaven to Kiel on 9-10 November 1909. This forty hour trip tested the endurance of crews and submarines. The reason so many tests involved endurance was that naval experts questioned whether a crew could withstand the strain of a few days on the high seas or whether the machinery would hold up.

Indecisiveness marked the Naval Staff's operational plans as new chiefs constantly revised strategy. The 1909 plans called for offensive action by the High Seas Fleet. However, its commander, Admiral Holtzendorff, was reluctant to meet the Royal Navy with the inferior forces at his command. He

132 "Der heutige Stand des Unterseebootwesens," Nauticus, 1908, pp. 192-223.

133 Die Flotte (January 1910), p. 9; Nauticus, 1910, pp. 74, 268-75; and Hassell, Tirpitz, p. 162.
suggested using the High Seas Fleet as bait with which to lure the Royal Navy into situations favorable to torpedo boat, submarine and mine attacks. These weapons would then whittle away at the British superiority.

Tests continued as the German Navy sought to master the riddle of the submarine. The submarine's role was clarified some in 1912 by a Reichsmarineamt memorandum. "The view to be kept in mind in submarine construction," it stated, "is their use off the enemy's coast." This was the purpose behind most of the tests. During the fall of 1911 a submarine flotilla, operating together for the first time, took a fourteen day training cruise in the North Sea, using Cuxhaven and Heligoland as bases. Results were apparently satisfactory.

Both the Reichsmarineamt and the Naval Staff competed for control of the submarine. Each jealously guarded their privileges. In submarine doctrine two conflicting ideas divided the two bureaus. Offensive high seas boats were supported by the Reichsmarineamt, and tests for sea endurance were carried out under its direction. The Naval Staff, on the other hand, felt submarines were an extension of coastal defense or, at best, an auxiliary of the fleet. Opinion in the fleet was also divided. Tirpitz wanted to control submarine

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134 Kennedy, pp. 67-68.
135 Tirpitz, Memoirs, II: 419.
development, but the Naval Staff fought to curtail his influence and succeeded in forcing him to submit his test proposals for their approval. Most of these the Naval Staff opposed.

A struggle ensued between the two. Tirpitz often resorted to clandestine action to carry out his ideas. As early as 1909 secret tests were conducted with submarines under the guise "technical experiences." Tirpitz tried to hide from the fleet officers and Naval Staff how far the submarine had been developed. How well he succeeded is questionable.

Submarines were under the Reichsmarineamt's direct control and Tirpitz had the upper hand in his struggle with the Naval Staff. Tirpitz frustrated the Naval Staff's plans whenever he could. For example, he refused to allow the submarines to participate in Naval Staff maneuvers. However, Admiral Capelle, Tirpitz's chief aide, allowed the submarines to participate in the 1912 maneuvers while Tirpitz was away on holiday in south Germany. Evidently Capelle harbored no petty departmental jealousy towards the Naval Staff and believed his action justified for the sake of the Navy's development. U-5 through U-12 participated in the maneuvers, for the older boats were held out and the recently completed

137 Tirpitz, Memoirs, II: 412, 413-20; Hubatsch, Admiralstab, pp. 115-16.
138 Tirpitz, Memoirs, II: 419.
139 Bundesarchiv-Marinearchiv, Nachlass Michaelis, N164, vol. 4,32, cited in Herwig, German Naval Officer Corps, p. 27.
boats were finishing their trials in the Baltic Sea. In an attempt to conceal from the foreign press the fact that Germany possessed so few submarines, Admiral Wilhelm Lans, inspector if the maneuvers, painted Is in front of the numbers on U-5 through U-9 turning them into U-15 through U-19. This was done without the knowledge of some of the commanders, who spent a long evening enjoying themselves at the Kasino in Wilhelmshaven. When they returned early the next morning they were unable to find their boats and searched the entire harbor, much to the amusement of their crews.

Reichsmarineamt-directed sea endurance tests continued throughout 1912 and 1913. The extent of time at sea varied as did the numbers participating, but the cruisers were conducted under "warlike condition." On 29 November the Inspektion des Torpedowesens submitted a report of the results of these tests (Erfahrungsbericht). The report estimated that in case of war with Britain submarines could be depended upon for a 300-mile operational patrol of five days endurance, which included the 300-mile return journey. This placed the submarine approximately in the middle of the British east coast or the eastern area of the English Channel.

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140 Busch and Forstner, pp. 474-75.
141 Ibid., p. 475; Spindler, Handelskrieg, I: 149; Thomas, Raiders of the Deep, p. 13; and Tirpitz, Memoirs, II: 408.
Late in 1912 the Naval and General Staffs held joint meetings in an effort to coordinate their war plans. The issue was how to exert the greatest possible naval support for the Army. The idea of a battle in the North Sea was dropped by the Navy. They did not feel it would be successful. The General Staff believed that Calais, Boulogne, Dieppe, and Dunkirk were the most probable disembarkation ports for the BEF and wanted the Navy to take action against them. The Navy would not agree to send the High Seas Fleet, but did consent to "immediate submarine warfare against English troop transports," which promised a better chance of success. A blockading British fleet would be damaged as much as possible "through numerous and repeated attacks day and night" by torpedo boats and submarines. Wilhelm approved this plan and exhorted Tirpitz to quickly build up the submarine fleet. He was already doing so.

In 1912 Nauticus considered the submarine's offensive capacity improved. Enemy bases were now within range and squadrons of ships on the high seas were in danger from attack. Speed, however, was still a problem that made it difficult for a submarine to maneuver into position for an attack on moving vessels. Nauticus suggested sending out small scout ships in advance of the submarine to spot enemy warships. Position and course of the reported ship could be

142 Görlitz, Der Kaiser..., p. 125; and Hubatsch, Admiralstab, p. 158.
relayed by wireless and the submarine could maneuver into firing position. "Without these Führerfahrzeuge the prospects of the submarine are considerably lessened." These vessels, Nauticus knew, could not operate near an enemy coast in wartime, therefore the value of a submarine operating off the enemy's coast presented a "difficult assignment, one perhaps never solved." When the new diesel submarines capable of operating on the high seas were ready, Nauticus believed the situation might change. Still, the submarine was an auxiliary weapon (Nebenwaffe), which could never claim command of the sea. They were like torpedo boats and could perform the same assignments during the day as the torpedo boats did during the night.

An article written in Die Flotte by Kapitänleutnant Schaper in April 1912 attempted to describe what role the submarine would play in the fleet based on battleships. Schaper thought it should be a support weapon. The submarine's ability to remain at sea for many days and make long cruises made it too valuable for purely coastal defense. Submarines represented a danger to blockading fleets. Schaper feared a British blockade and its effect on German trade. Breaking the blockade was the duty of the High Seas Fleet, but it needed

143 Nauticus, 1912, pp. 185-93.
support from weapons like the submarine, used singly or in small groups, which would force the blockade farther and farther onto the high seas. Reflecting the current opinion on sea endurance, Schaper said that a few submarines would not be able to accomplish the task mentioned. A strong force was required because submarines needed "continuous repair," and the crews tired quickly due to strain and must be continually replaced. He believed if war came it might be necessary for Germany to fight on two separate fronts, the Baltic and North Seas. Therefore a large number of submarines were needed to meet all contingencies.

Fewer sea endurance tests were made in 1913 and 1914. The Reichsmarineamt must have felt it had acquired all the information it could from the gas boats and the diesels were not yet ready. Submarines were more and more involved in exercises with other vessels besides torpedo boats and used offensively against the fleet during maneuvers. During fleet maneuvers the Commander-in-Chief of the High Seas Fleet used all the participating submarines as auxiliary vessels, deployed in protective cordons or as reconnaissance vessels, much to Tirpitz's displeasure. The Torpedowesen Abteilung

146 Hubatsch, Admiralstab, p. 169; Tirpitz, Memoirs, II: 412-13. The French Navy used its submarines in a similar manner and it was believed by a few that the battlefleet only attained its "full value" when used with submarines. Cited in Herbert C. Fyfe, Submarine Warfare Past and Present, 2nd edition, revised (New York: E.P. Dutton & Co., 1907), p. 18.
participated for the first time in a test mobilization in the summer of 1913. One submarine flotilla, with its Chef flying his flag in the small cruiser Hamburg, was ready. Fourteen submarines, U-5 through U-18, comprised the First Flotilla and were divided into two Halb-Flottillen under Halb-Flottillen Chefs in the torpedo boats T-5 and S-99. The flotilla was stationed in the North Sea and was listed with the coastal defense vessels. Although many reservists were called up for the mobilization and some held their own commands, none were even allowed to serve as officers on the submarines, reflecting the specialization required for submariners.

A second flotilla comprising the new diesel boats was included in the 1913-14 winter maneuvers. The First Flotilla under Korvettenkapitän Hermann Bauer was stationed in the Baltic Sea and once again had U-5 through U-18. Its Halb-Flottillen boats were D-5 and S-99. The new Second Flotilla under Korvettenkapitän Otto Feldmann was stationed in the North Sea in place of the older gas boats. Feldmann flew his

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flag in the small cruiser *Stettin*. Only five boats, U-19, U-20, and U-23 through U-25, made up one *Halb-Flottille* under S-100. Both flotillas operated independently of the fleet, probably in the role of blockade breakers. The older boats, U-1, U-3, and U-4, were unattached and stationed in the Baltic more or less as harbor defense. U-2 was under repair and did not participate. Mobilization plans for the spring of 1914 varied slightly. The only difference being both flotillas were stationed in the Baltic and three new diesel boats had joined the Second Flotilla, which now included U-19 through U-26. These eight boats were divided into two *Halb-Flottillen* under T-100 and T-101.

In 1914 German naval operations plans called for a defensive strategy in the Baltic and North Seas. A British blockade was expected. Although earlier maneuvers had shown that close blockade was not feasible, the Naval Staff refused to abandon its plans. The High Seas Fleet would be held back while the only offensive action taken was in the form of submarine patrols and mine laying. Tirpitz's view of the submarine's role in war had not been accepted by the Naval

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150 Ibid., Zu 2/1242/19 Anlagen I. Nachweisung der im Falle einer Mobilmachung (Sommer).
Staff.

Although the High Seas Fleet was to be held back, it was still considered the main weapon as Nauticus explained in 1914. Submarines were very important for use against blockades and had forced the close blockade to give way to distant blockade. "Decisive battle" would now be fought farther out on the high seas. Thus it was all more necessary to build battleships.

During the spring and early summer of 1914 submarine exercises were stepped up. A special squadron of ships was formed to work with the submarines. Tests included those for underwater stability; night surface attacks that proved promising except for the loud backfiring of the gas boats; and target direction by airplanes, whose small range and poor signalling ability showed that this type of operation was premature. During a visit by Admiral Tirpitz in June, Bauer's flotilla demonstrated "practical torpedo attacks against the High Seas Fleet" and later during maneuvers showed the base at Heligoland to be less than impenetrable.

In 1914 Germany began arming her submarines with deck guns. These were made by Krupp and were of two calibers, a 1.4 inch gun for the smaller gas boats and a 3.3 inch gun for the larger diesel boats. The smaller guns had removable

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parts and remained stationary when the submarine dove, while the larger gun was lowered into a watertight compartment. Britain, however, was the first to arm submarines. O-4 was armed in 1911 and so were the following boats. The E class had two 3 inch guns. Guns were found necessary for use against other submarines and light forces and, what was becoming an ever growing potential menace, air attack. The danger was not mere speculation on the part of the German Navy. In 1912 the British were using airplanes to detect submarines above and below the surface and to drop bombs on them. The deck gun, originally designed as a defense against light forces and aircraft, later became the main offensive weapon used by the submarines during the war.

3. Organization of the Submarines

The organization of the submarines reflected the cautious policy adopted by Tirpitz. For years no autonomous submarine department existed. In 1906 the U-Boots-Wesen was established under the Reichsmarineamt. This organization controlled the submarines until 1910 when it was replaced by the Torpedowesens Abteilung, or Inspektion des Torpedowesens. At the head of the department was an Inspekteur. His staff

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155 *Nauticus*, 1910, p. 77.
included a chief of staff, an adjutant, a Referent für U-Bootswesens (superintending officer for submarines), a Referent für Funkentelegraphie (superintending officer for wireless), and a Torpedoboote-und U-Boote-Abnahmekommissionen (acceptance commission). All the available submarines were organized into a flotilla and new boats were added as they became operable. A torpedo boat, D-5, was the flotilla. Two old ships, Sophie and Moltke, served as barracks for the crews. A submarine school was established to supply a "scholastic education" for the submarine crews, who, as Nauticus explained, had previously received their instruction on the sea. Total submarine personnel in 1910 amounted to only one company and in 1911 to two companies.

The organization of the submarines remained unchanged until the 1912 naval law, which provided for an increase to four flotillas. The Hamburg was assigned to the First Flotilla as flagship of the Chef der Unterseeboote-Flotille and the flotilla was divided into Halb-Flotillen. Not until 15 March 1914 was an autonomous submarine organization, the U-Boote-Inspektion, established. The Inspekteur, Kapitän zur See Nordmann, assumed the responsibilities of the former

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157 Nauticus, 1910, p. 77; and Nauticus, 1911, p. 37.
Inspekteuer des Torpedowesens. These included responsibility for developing the flotillas and submarines as a weapon; command of the land bases and school; responsibility for submarine construction. In 1914 the Second Flotilla of new diesel submarines was formed under Otto Feldmann and Hermann Bauer took command of the First Flotilla.

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After assuming his post as Inspekteur der Unterseeboote, Nordmann wanted to project future submarine construction to guide his plans. He thought it best to base construction on the number of submarines needed in war. Nordmann informed the Reichsmarineamt of his plans and approval was given to go ahead. Nordmann then set his staff to work on the project. The first assignment was to decide what role the submarine would play in war. A memorandum was drawn up and submitted by the submarine expert of the staff, Kapitänleutnant Ulrich-Eberhard Blum. According to Blum, the role assigned to submarines in a war with Britain was to cut off British trade. Nordmann agreed with Blum’s proposal and asked him to detail his ideas. Blum’s elaborate plan must have staggered Nordmann. It contained an outline of a commerce war against Britain that included forty-eight blockade stations patrolled by 222 submarines, more than three times the number of submarines Germany would have after she carried out the 1912 navy bill. Blum had the opportunity to explain his proposal personally to Admiral Tirpitz, who was in Kiel during June. Tirpitz’s reaction to the proposal is unknown. Nordmann, however, believed that the idea was not yet "ripe for dis-
cussion." The proposal was not acted upon and the memorandum went no further than Nordmann's office.

Admiral Tirpitz stated that as "soon as it was possible for submarines to operate overseas, the war on merchant shipping was in the air; no special father was needed for this idea." He can only be referring to Blum's memorandum. There was little mention of submarine's as commerce raiders before the war in Germany.

One of the few pre-war calls for a commerce war with submarines came in 1908. Vizeadmiral z. D. Freiherr von Schleinitz wrote an article about it in the Deutsche Revue. Schleinitz's article questioned Germany's naval construction policy and seemed inspired by Karl Galster's writings. Schleinitz was a submarine enthusiast, who foresaw that Germany's High Seas Fleet could never cut off British trade. However Schleinitz disagreed with Galster, who wanted armored cruisers for commerce destruction. Germany did not possess adequate overseas bases for this type of operation. A submarine could effectively destroy British trade, and silently.

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159 Spindler, Handelskrieg, I: 153-54. Blum's memorandum was subsequently lost after the war, however a map with his proposed blockade stations did survive.


161 Spindler, Handelskrieg, I: 156.

That would be more effective than a fleet engagement. Submersibles with extended operational radius could encircle Britain entirely and penetrate into the English Channel and inland waters. However, he foresaw that in order to carry out a submarine commerce war Germany had to disregard existing international law; submarines could not take on board the crews of merchantmen. Schleinitz therefore urged the construction of large submersibles capable of holding the crews of merchantmen. In view of the condition of the submarine at the time—especially Germany's—Schleinitz's proposal was a bit ridiculous and, Arno Spindler claims, soon forgotten. Late in 1909 erroneous information reached Germany's American ambassador about a new German submarine (supposedly U-18) which reportedly had a 6000 yard torpedo range and a forty knot surface speed. Supposedly "the Reichsmarineamt was seriously considering the possibilities of a war in which merchant ships would be targets." No such submarine existed or would exist for quite some time with those characteristics, and the nearest the Reichsmarineamt was to considering a commerce raiding doctrine for submarines was projecting operations against enemy warships off the British coast.

163 Spindler, Handelskrieg, I: 153.
164 Manchester, Arms of Krupp, pp. 292-93.
Hermann Bauer denied that the idea of a submarine commerce war was even considered in the Navy before the war. The Navy only thought of using submarines against the Royal Navy. Construction was not geared towards a commerce war nor were exercises and tests conducted before the war with this in mind. Some people naturally thought of the idea before the war and some naval officers debated its feasibility. It was discussed by the commanders of the new diesel boats, who agreed with the idea theoretically and felt their boats could carry out such an operation. Kapitänleutnant Freiherr von Forstner, who commanded U-28 when the war broke out, recalled that when the commerce war was announced in February 1915 it was a role in which "I must admit, that few people had anticipated before the commencement of hostilities.

The fear that the Germans might use their submarines in a commerce war was more widespread on the other side of the North Sea in Britain. First Sea Lord "Jackie" Fisher warily watched the German submarine development. More than once he expressed his respect for the submarine. He believed that it

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165 Bauer, Führer der U-Boote, p. 17, and Reichsleitung und U-Bootseinsatz, pp. 5, 30-31, 96. Only actual war experience could show what the submarine was suited for. See also Arno Spindler, "The Value of the Submarine in Naval Warfare," United States Naval Institute Proceedings 52 (May 1926), p. 832.

166 Spindler, Handelskrieg, I: 153, 154.

was the "COMING TYPE OF WAR VESSEL FOR SEA FIGHTING." As early as 1912 Fisher foresaw the use of submarines against British merchantmen. The large high seas boats of the German Navy would enable the Germans to penetrate the English Channel and reach the major British ports. Like his contemporaries, however, Fisher also doubted the endurance of the crew on such long cruises. Hardly an idealist, Fisher felt that once war broke out the rules governing the conduct of commerce raiding were meaningless. In a memorandum submitted to the government in the spring of 1914 Fisher again raised the issue of submarine warfare.

Those who lecture on International Law say the civilized world would hold up its hands in horror at such acts of barbarism as a submarine sinking its prey, but yet an enemy can lay mines without outraging propriety! After all, submarines can exercise discretion -- mines can't!

Fisher recognized the problem peculiar to submarines engaged in a commerce war and the one which had the greatest political repercussions during World War I. International law dictated that a warship stopping and sinking a non-belligerent was responsible for the safety of its crew. Because of its small crew, a submarine could not afford to place a prize crew on board each ship it stopped, and its

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small size would not allow it to take captive the crew. Fisher felt the submarine had no other choice but to sink merchant ships. The submarine menace was "a truely terrible one for British commerce."

Before the war few people in Britain, civilian or military, took Fisher's views on submarine warfare seriously. In the summer of 1914, however, the role of the submarine was publicized by two prominent figures. Admiral Sir Percy Scott wrote an article in *The London Times* in which he stated that submarines had made dreadnoughts obsolete. The other, and perhaps more prophetic, writer was the reknowned Sir Arthur Conan Doyle, who wrote in the *Strand Magazine*. Doyle wrote about an imaginary future war in which Britain was starved out and forced to sue for peace by a ruthless commerce war carried out by eight submarines of a third rate naval power. No doubt that he implied this to be Germany. Generally a commerce war by submarines was too horrible an idea for the world to accept at that time and those who raised the issue were voices in the wilderness.

As far as seeing the value of the submarine as a commerce raider, Tirpitz does not appear farsighted, but neither were very many of his contemporaries.

During the Kiel Week festivities in June 1914 the Royal Navy took an interest in the German submarines that were hidden from view on the far side of the harbor. The Germans tried to keep secret from the British the size and number of their submarines and posted guards around the area to keep away curious onlookers. Neither the British nor the Germans imagined that in a few short weeks those same submarines would be patrolling the North Sea in a search for the Royal Navy.

When war was declared in August, twenty-nine German submarines were completed. However this number is misleading, for not all the boats were ready for military use. Four boats, U-1 through U-4, were primarily for training; U-19 through U-28 were at various stages of training and not yet available for duty; and U-29 had just come off the stocks on 1 August. The only submarines ready were U-5 through U-18 in Bauer's First Flotilla. Germany began the war with fourteen old gas boats whose military value, while adequate, was far less than that of the diesel boats. Germany's dockyards were crammed with uncompleted diesel submarines. Germaniawerft was the biggest offender with twelve; Danzig had four. Trouble with the diesel engine was the biggest cause of the delay. Instead of over forty submarines ready for use at the outbreak of war, a number which would have included twenty-three high seas
diesel boats, Germany only had fourteen gas boats. The number of available submarines only increased slightly during the first year of the war, usually hovering around thirty.

Tirpitz reacted to the outbreak of the war by following mobilization plans and ordering more submarines. U-46 through U-50 were ordered from Danzig on 4 August 1914 and six boats, U-51 through U-56, were ordered from Germaniawerft on 7 August. But Germaniawerft could not handle the order and it was transferred to Weser-Werft. Two month later Tirpitz gave the rest of the order to Weser-Werft, and six more boats, U-57 through U-62, were built at the Bremen yard, the first shipyard besides the Imperial Yards and Germaniawerft to receive submarine orders. Weser-Werft used the Imperial Yard's plans, and Tirpitz hoped that they could deliver faster than 173 Germaniawerft.

Admiral Tirpitz delayed submarine construction as long as possible because he desired a high seas boat. When Germany finally did build submarines they were only of that type. This enabled her to avoid many of the problems encountered by the other European navies and allowed her to take the lead in developing the high seas boat. Concentrating on only one type,
Germany produced a technically superior boat. Few shipyards, however, were involved in construction. When the diesel engine was ready for production and Tirpitz gave the go ahead for increased construction the shipyards at Danzig and Kiel could not handle the orders. Perhaps the fact that the German submarine industry was young, compared to those of other countries, made a difference. If Tirpitz had begun building submarines in 1900 instead of in 1905, more experience would have been gained and the problems encountered in 1911-1914 might have been more easily solved. This is mere speculation. The fact remains that at the outbreak of war in 1914 Germany's submarine fleet was much smaller and weaker than it might have been.

In the matter of submarine strategy a struggle ensued between Tirpitz and the line and Naval Staff. The struggle centered around two opposing concepts of the role of the High Seas Fleet. Tirpitz, who endorsed an offensive strategy, wanted the submarine to operate near the enemy's coast. The line and Naval Staff, on the other hand, who thought in more traditional terms, felt the High Seas Fleet had no chance against the Royal Navy until a more equal balance of strength had been obtained. This would be brought about by submarine and torpedo boat attacks on the blockading British fleet. The struggle continued down to the outbreak of war—and after. Eventually the Naval Staff's conception was adopted and became the basis for the operations plans in 1914.
There was little talk of an unrestricted submarine commerce campaign in pre-war Germany. Few people in the Navy even considered the idea. Certainly the old gas boats could not effectively carry out such an operation. The diesel boats were still new in the spring of 1914 and their capabilities relatively untested. Kapitänleutnant Blum's memorandum on a submarine commerce war against Britain was agreed with in principle by his immediate superior, but rejected as unfeasible at the time and not acted upon. Most of the talk about submarine commerce warfare originated in Britain. Far seeing people like Admiral Fisher warned of its use, but few heeded his words.
CHAPTER IV

THE WAR

1. Submarine Operations: August-October 1914

A defensive strategy was adopted by the Navy when the war broke out. Submarines and light forces were supposed "to wage for the present guerilla warfare against the English" until the Royal Navy's superiority had been sufficiently reduced to allow the High Seas Fleet to sail out and engage in battle on equal terms.

The submarines were among the first to be alerted. On 30 July orders came down to the submarine commanders to mobilize their boats. At 3 PM on 31 July nine submarines, U-5, U-7 through U-10, and U-15 through U-18, started their gas engines and sailed for Heligoland. Early on the morning of 1 August, days before Germany was at war with Britain, they formed a defensive ring around Heligoland in expectation of a close blockade by the Royal Navy. The submarines were stationed as outposts to defend Heligoland Bight and inform the fleet whenever the British arrived. The days were uneventful and the submarines idled away their time tied to marker buoys. The most difficult task was entering and leaving Heligoland harbor. This "useless" and impractical assignment angered Hermann Bauer. On 4 August he was summoned to Wilhelmshaven

Tirpitz, Memoirs, II: 88.
for a conference with the Commander-in-Chief of the High Seas Fleet, Fridrich von Ingenohl. Bauer expressed to Ingenohl his dissatisfaction of the manner in which the submarines were being used and urged that "the submarines be released from their systematic guard of the Heligoland Bight and that they be given an offensive assignment." Bauer asked that the assignment not be too difficult. For example, he did not want the submarines patrolling off the British coast, yet, and he suggested a patrol into the North Sea in search of the Grand Fleet. Ingenohl accepted Bauer's proposals and the appropriate orders were issued that night.

Ten submarines under the command of Kapitänleutnant Arno Spindler in U-18 sailed out in search of the Grand Fleet on 6 August. Almost immediately one boat turned back with engine trouble, reducing the patrol to nine boats. The boats operated independently and had orders to attack nothing but battleships and cruisers; on the return trip all warships were fair game. One at a time the boats broke away from the main group and a line extending northwest was formed. Conditions were poor and the Grand Fleet was not

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175 Bauer, Führer der U-Boote, p. 20.
found. Rain and heavy seas hampered visibility and may have been responsible for the loss of U-15, which was rammed by the British cruiser Birmingham. For unknown reasons another submarine, U-13, failed to return. Unknown to the Germans the patrol produced a submarine scare throughout the Grand Fleet. British warships reported sighting submarines as far away as Norway and the Orkneys. Wilhelm was extremely interested in this first patrol of the submarines and was disappointed in the "failure of the U-boats to come up to his expectations as a long-range weapon." Despite the Emperor's feelings, there were many in the high command who considered the operation a success and were impressed by the submarine's seas endurance and ability to act independently.

Not much happened in the Baltic Sea. The older training boats were sent there soon after the war opened as were the new diesels, which were completing their trials. The old boats were of slight military value, but participated in operations. In August the Baltic Fleet under Vizeadmiral Behring made an attack into the Gulf of Finland. U-3 parti-


icipated as a support vessel, but its operational radius was small and its fuel consumption high and it was towed most of the way. Generally, there was little action in the Baltic and submarines helped blockade Libau later in the year and went on anti-submarine patrols after a few British submarines penetrated the Danish Belts.

In early August naval leaders met to discuss the possibilities opened up by the submarine. Hugo von Pohl, Chief of the Naval Staff, and Ingenohl held a meeting on the subject on 8 August. The result was continued patrols into the North Sea, although on a smaller scale than the first one.

What became of the Navy's plans to disrupt the landing of the BEF? The troop transports were heavily guarded and the old gas boats found it difficult to penetrate the screen. Submarine commanders encountered a problem that later became an international issue: distinguishing which ships were transports and could be attacked, and which were non-belligerents and could not. The submarine commanders were only authorized to sink transports, not every vessel bound for France. Many, fearing a mistake, refused to attack. In


180 Pohl, p. 7; Scheer, p. 38; Tirpitz, Politische Dokumente, II: 49, from the war diary of the Reichsmarineamt's Zentralabteilung, 8 August 1914.
addition, the transports usually sailed at night, which made the problem of identification more difficult. No British transports were lost to German submarines.

It was obvious that the submarines had obtained a higher position within the Navy when on 21 August all the submarines were united under the command of Hermann Bauer, now a Fregattenkapitän. Bauer assumed the title Führer der U-Boote, or more commonly F.d.U. Bauer's command was stationed at Wilhelmshaven as part of the Kommandos der Hochseestreikräfte and a Naval Staff officer, Kapitänleutnant Friedrich Lützow, was assigned as his chief of staff. From now on Bauer directed the submarines. He "was the responsible advisor in all questions of the use of the new submarine weapon." Bauer had been involved with submarines since U-1 and knew them inside out. He was ambitious, energetic, enterprising, and possessed personal courage. During the war he accompanied a submarine on patrol in order to experience for himself the problems and conditions confronting his commanders. He was the man who initiated the discussion that eventually led to unrestricted submarine warfare.

Submarine patrols continued throughout the late summer and had a tendency towards special assignments. The submarine's prey was the warships of the Royal Navy, which were searched for in the North Sea and along the British coast. In

181 Bauer, Führer der U-Boote, p. 28; Jameson, Most Formidable Thing, p. 122; Spindler, Handelskrieg, I: 5.

182 Spindler, Handelskrieg, II: 8; Bauer, Führer der U-Boote, pp. 18, 19.
early September U-20 and U-21 went on one of those special assignments to the Firth of Forth, the Grand Fleet’s main operational base. The fleet was not found, but U-21 sank the **Pathfinder**, a small 3000 ton cruiser. Soon after, U-9, operating in the same area, sank a small 2000 ton warship. By no means were these major accomplishments, but they were the first submarine successes and members of the naval high command were pleased.

On 22 September U-9, commanded by Kapitänleutnant Otto Weddigen, scored the greatest submarine success of the young war. U-9, heading towards the Belgian coast to patrol the area against possible British landings, sighted the **Aboukir**, **Cressy**, and **Hogue**, three outdated, slow, armored cruisers sailing in a straight line. It was easier than peacetime maneuvers for the old gas boat and the cruisers were promptly sunk. News of U-9’s success made the Emperor euphoric along with the entire Navy.

When U-9 arrived in Wilhelmshaven, belching black smoke from her gas engines, sailors of the High Seas Fleet crowded the decks of their ships and cheered. Weddigen provided the

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184 Görlich, *Kaiser and His Court*, p. 34. Müll reported that the sinkings sent Wilhelm into "seventh heaven." See also Thomas, pp. 15-21; and Corbett, I: 175-83.
Navy with more than a military success. He enabled the Navy to hold up its head with pride. Hitherto, the Army had monopolized the glory while the Navy accomplished very little and jealously looked on. Now the Navy felt it had contributed to the war effort. Great things had been expected of the Navy from the public and little had been done to justify the expense and effort of its build up. This was why Wilhelm reacted as he did. Enthusiasm for the submarines swept through the fleet, especially among the junior officers, many of whom applied for submarine duty because they thought "they would probably see more action in the submarine service."

Weddigon, who was somewhat horrified by the carnage he wrought, received the Iron Cross, first class, while the rest of his crew received the Iron Cross, second class. It was a small reward for the valuable service they had rendered the Navy.

Shortly thereafter Weddigon sank the small cruiser Hawke, for which he received one of Prussia's highest military decorations, the Pour le Merite. Other commanders, too, enjoyed successes. Kapitänleutnant Bernhard Wegener sank the British submarine E-3 and the old cruiser Hermes in October. The gun boat Niger was sunk by Kapitänleutnant Walther.

185 Thomas, Raiders of the Deep, p. 82; see also Pohl, p. 72; Scheer, Germany's High Seas Fleet, p. 58; Horn, Stumpf Diary, p. 49; and the New York Times (24 September 1914), p. 1, report from the Times' Berlin correspondent.
Forstmann on 11 November and the old Russian cruiser Pallada
was sunk in the Baltic on 11 October. During the first months
of the war it was mainly the submarines that supplied the
Navy with successes.

It is interesting to compare the comments of Admirals
Pohl and Tirpitz written the same day (17 October) about the
submarine successes. Pohl wrote that because of the recent
successes, "people expect too much of them." Tirpitz noted
that the submarines were doing well but believed "we must be
prepared for mishap..." The sentiment expressed in these
two comments is that the submarines had exceeded their ex-
pectations.

Early submarine patrols showed that pre-war planners had
underestimated the sea endurance of crew and boat. During the
early part of the war gas boats usually had an eight day en-
durance limit, but some like U-16 were still operational after
fifteen days. Ten days, and sometimes fourteen, were becoming
common for the diesel boats; some went as long as seventeen
days.

Two extraordinary cruises by U-20 and U-29 awakened the
Navy even further to the submarine's potential. In October
U-20 penetrated the recently mined English Channel at the
beginning of her patrol but did not wish to repeat the ordeal

186 Pohl, p. 80; Tirpitz, Memoirs, II: 263.
187 Busch and Forstner, pp. 382-83; Scheer, p. 63; Spindler, Handelskrieg, I: 172; and Pohl, p. 74.
on the return journey. So, she sailed around Britain and Scotland to her home base. In the case of U-29, a forward diving rudder broke, and she was unable to dive. Her commander took her home via an arduous path around Ireland and Scotland. Both voyages were accomplished without the aid of maps or charts. Submarine commanders were only supplied with maps of the channel and no farther at the beginning of the war. Few experts in the German Navy expected the submarines to be sailing farther west.

Not only did the German submarines exceed the expectations of their own navy but also that of the British as well. By late September, Winston Churchill wrote, the British were painfully aware of the "power of the largest submarines under war conditions," and feared an attack on their ill-defended east coast bases. The Commander-in-Chief of the Grand Fleet, Admiral John Jellicoe, complained to Churchill about the "lead" Germany had in high seas submarines. Until the North Sea was cleared of submarines the fleet must be held back from the area. He suggested stationing French and British submarines along the probable paths of the German submarines to intercept them. Throughout the fall and early winter

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188 Busch and Forstner, pp. 382-83; Spindler, Handelskrieg, I: 172.
190 Ibid., pp. 417-18; and Patterson, Jellicoe Papers, I: 71.
Jellicoe, Fisher (recently returned to the Admiralty as First Sea Lord), and Churchill were often preoccupied with the danger from German high seas boats. Nowhere was the Grand Fleet safe.

One factor in the early successes of the German submarines was the lack of British defenses. In 1903 the British had worked their destroyers against submarines but no further experiments in anti-submarine defense were carried out until after the war began. Early in the war mines and patrolling were the most effective means of defense but left much to be desired.

Submarines sailed virtually anywhere they desired. Should, therefore, the submarines have had more success? Arno Spindler thought so. A rational evaluation showed that only carelessness on the part of the British allowed many of the early successes. The fighting value of those ships sunk was small and there were too many patrols that returned without having achieved anything. Underwater attacks were the one

191 Patterson, I: 71ff.
193 Spindler, Handelskriege, I: 4; Official German Documents, I: 545. "Counter-measures were so insignificant in the year 1915 that a U-boat could go to work exactly the way a pike goes to work in a carp pond."
area in which submarines did not exceed pre-war estimates. Tests before the war showed that underwater attacks usually failed. This held true during the war. Submarines travelled too slowly underwater to maneuver into position for an attack on most warships. The more modern ships were too fast, and if taking evasive action were virtually impossible to hit with a torpedo. Warships, moreover, were scarce. However, there was an alternative that looked increasingly promising—merchant ships. They were plentiful, slow, and easier to attack. It did not take long for submarine commanders to realize this. Hermann Bauer's active and creative mind was beginning to formulate plans for a war on the British merchant fleet.

2. Organization of the Navy and Naval Staff Operations Plans

Soon after Wilhelm became Emperor he reorganized the Navy. Its powers were divided among several departments in order that nobody except the Supreme Commander, Wilhelm, had control. Around the turn of the century the Navy was again reorganized. It then remained unchanged until late in the war. The three main departments were the Reichsmarineamt (Imperial Navy Office), headed by a State Secretary; the Admiralstab (Naval Staff), headed by a Chief; and the Marine-Kabinett (Naval Cabinet), also headed by a Chief.

Steinberg, Yesterday's Deterrent, pp. 62-64; and Hubatsch, Admiralstab, pp. 49-85, 236-37.
Supposedly the Reichsmarineamt was "the highest Naval Command of the German Empire in organization, armament, fortifications, and in all technical and managerial affairs." Responsibility for operations plans, however, were the Naval Staff's. The Naval Cabinet controlled personnel, and its Chief served in an advisory capacity to the Emperor. Difficulties naturally arose over authority. Direct access to the Emperor, Immediatvortrag, was granted a myriad of lesser officers. Admiral Tirpitz opposed decentralization. Before the war he effectively blocked the influence of the other departments on Wilhelm and his position was the strongest within the Navy, giving the appearance that he was the Navy's head. Thus Tirpitz's hopes were kept alive that in case of war the Emperor would create a unified Supreme Naval Command under the Grand Admiral.

Before the war Tirpitz exchanged views with the Chiefs of Staff and, despite differences over strategy, war preparedness, and the submarine, was usually kept informed of the operations plans. However in 1913-1914 the new Chief of Staff was not so open with Tirpitz about the war plans. Hugo von Pohl, who became Chief of Staff in 1913, jealously guarded the operations plans. The plans from 1910-1913 called for offensive action by the High Seas Fleet. Under Pohl

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195 Tirpitz, Memoirs, I: 184, 189-90.
196 Tirpitz, Politische Dokumente, II: 37, Operations Directives for 1910, 1911, 1912, and 1913.
the new plans called for a switch to a defensive strategy until the Kräfteausgleich, equalization of strength, was obtained. Thus when Tirpitz was informed of the war plans on 30 July 1914 he was "surprised to learn of the Navy's plan of operation, which had been withheld from me."

The weakness of the naval command structure was never more evident than during the first days of the war. Tirpitz believed the door to the supreme command of the Navy was opened to him. On 28 August he told Admiral Müller that he wanted a centralization of the Navy under his command and asked Müller to acquire Wilhelm's consent. Tirpitz refused to ask the Emperor himself, knowing that the Emperor would refuse such a direct request to relinquish his control of the Navy.

Admiral Müller was a man who operated backstage, a sycophant with more real power than was apparent. He was Wilhelm's naval advisor and, as part of the official entourage, accompanied him wherever he went. Although only officially responsible for naval personnel, Müller influenced many of Wilhelm's decisions about the Navy. He was present at audiences and could often influence the easily persuaded Wilhelm. If Müller opposed anyone, that person usually had little success with the Emperor. As Müller himself once said: "I can

not always carry my point with the Emperor, however I can prevent others from doing so."

Müller met with the Emperor on 30 July. He could have pressed Wilhelm to unite the Navy under a single command for the sake of giving clarity and leadership to the conduct of the war. He did not. Wilhelm refused Tirpitz's request and Müller did not press the issue. He did follow with a suggestion which had disastrous consequences for relations among the officers of the naval high command and the conduct of the war.

3. Beginning of the Tirpitz-Pohl Clash

Once the war began Admiral Tirpitz, much to his disappointment, had no official influence on its conduct, the responsibility resting solely with the Naval Staff. Müller suggested to Wilhelm that Tirpitz be given a voice in the conduct of the war. The Chief of the Naval Staff was to consult Tirpitz on all strategic matters, and any "unfavorable views" Tirpitz may have "were to be berought to His Majesty's notice." Wilhelm agreed and that same day Tirpitz and Pohl

199 Tirpitz, Politisches Dokumente, II: 33. "Ich kann nicht alles durchsetzen, aber ich kann alles verhindern." Also Tirpitz, Memoirs, I: 206-07; Bauer, Reichsleitung und U-Bootseinsatz, pp. 15-18 for his opinion of Müller; and Hubatsch, Admiralstab, pp. 49ff on the Naval Cabinet.

were notified of the decision.

Neither Pohl nor Tirpitz were pleased with this decision. First of all, Tirpitz was disappointed that the Navy was not placed under his command; secondly, he disliked sharing influence with Pohl, something he had not had to do for nearly seventeen years, and which was quite a setback considering his dominant position before the war; thirdly, Tirpitz's influence was actually slight and his suggestions for the most part ignored; and last, Tirpitz disagreed with the manner in which Pohl conducted the war. Pohl, on the other hand, resented having to send all his plans to Tirpitz for approval and felt this decision was a reflection on his ability. Later, Müller realized that he had "overestimated both the unselfishness of Tirpitz...and the goodwill of Pohl to use Tirpitz's advice in the Kaiser's interest."

Tirpitz might possibly have become reconciled to his secondary status at General Headquarters if at least the war had been conducted according to his views. However, this was not the case and Tirpitz found the inactivity of the fleet intolerable. Tirpitz's continued pleas for action brought him into conflict with most everyone at General Headquarters.

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201 Tirpitz, Politische Dokumente, II: 34, Kabinettsschreiben an der Chef des Admiralstabes, Admiral v. Pohl, 30 July 1914; and Görlitz, The Kaiser, p. 15.

202 Görlitz, The Kaiser, p. 18. After the war Müller wrote that it was a "grave mistake" on his part to bring Tirpitz to General Headquarters.

Müller and Bethmann Hollweg quickly saw through him; they knew the reasons which dictated Tirpitz's actions. Müller sided with Pohl against Tirpitz and shortly thereafter he opposed a proposal by Tirpitz which urged action by the fleet, calling it "prestige tactics."

It seemed wherever Tirpitz turned at General Headquarters he met with opposition. Those who differed with him were treated harshly in his post-war writings, and some, like Admiral Pohl, received special vilification. A most bitter enmity developed between the two while they were at General Headquarters. Whatever close relations existed between Tirpitz and Pohl before the war vanished once Pohl assumed a position of equal, if not greater, importance than Tirpitz.

As Pohl expected, Tirpitz could not resist interfering in the Chief of Staff's affairs, especially since he disagreed with Pohl's policy. Three times within a month Pohl


205 Görlitz, The Kaiser, pp. 17, 19; also in Tirpitz, Politische Dokumente, II: 46, note by Müller, 7 August 1914.

206 Tirpitz was extremely abusive towards Pohl with such comments as "I have more in my little finger than Pohl has in his whole anatomy...." Memoirs, II: 223.

207 BD, VI: 126, Captain Dumas to Sir F. Lascelles, 12 February 1908. The British naval attache observed that in 1908 Pohl was a "great, almost the only friend and confidant of Admiral von Tirpitz." See also Görlitz, The Kaiser, p. 15.
received memorandums from Tirpitz on the need for taking offensive action and urging him to send the fleet into battle. Pohl resented these intrusions on his authority and refused to act. Instead he hid behind the shelter of the Emperor, who agreed with his policy of holding back the fleet.

Tirpitz's attempts to make the Navy act offensively were blocked on all sides and he found himself isolated at General Headquarters. On 4 September he released his anguish in a letter to his long time friend and aide, Under-Secretary for the Navy Admiral Capelle, in which he described his plight at General Headquarters. Everyone conspired against him. Müller was opinionless on tactics and strategy and refrained from becoming involved in the disputes. "I am in an awful situation," he cried. Pohl's "pettiness and vanity" made him change every proposal of Tirpitz's and he presented these in a manner designed to elicit a "no" from the Emperor.

For his part Pohl never ceased suspecting that Tirpitz was intriguing behind his back. He resented sharing the spotlight with Tirpitz and became annoyed whenever he and Tirpitz

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208 Tirpitz, Memoirs, II: 95-102, 114-15, and Politische Dokumente, II: 104-06, Tirpitz to Pohl, 16 September 1914; Pohl, Aufzeichnungen und Briefen, pp. 26, 61-66. Pohl's standard reply to Tirpitz's entreaties was: "How do you propose to bring about the battle? Do you suggest that the fleet sail to England?"


210 Tirpitz, Politische Dokumente, II: 92, Tirpitz to Capelle, 4 September 1914.
together were asked for their opinions on matters. He schemed and attempted to undermine Tirpitz's position at General Headquarters.

Certainly the Pohl-Tirpitz clash was a disruptive force at General Headquarters, if not in the entire Navy. Both did their best to injure the other and make him appear in a bad light before the Emperor. Because Pohl feared that the least mistake would end in his dismissal, he acted cautiously with the fleet, and his leadership and direction were sometimes lacking. Cooperation in operations planning never existed. Thus at the beginning of October when the subject of a submarine commerce war was first discussed, the naval high command was in serious disarray. Decision-making was often determined by personal politics and not by rational considerations.

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211 Pohl, pp. 22-23, 68, 74-75.
212 Horn, Stumpf Diary, p. 125. Ordinary seamen like Richard Stumpf were aware of the rivalry existing between Tirpitz and Pohl. On 30 September 1915, after Pohl had left General Headquarters to take over command of the fleet, Stumpf wrote that "It is rumored that...Tirpitz has been dismissed and has been replaced by his archenemy, the commander of the High Seas Fleet, Admiral Pohl." 213 Pohl, pp. 86-87, and especially Pohl's comment on 25 November 1915, p. 91.
CHAPTER V

SUBMARINE COMMERCE WAR:
OCTOBER-DECEMBER 1914

1. Initial Discussions
   of a
   Submarine Commerce War

The first discussions for using submarines against
British merchant ships were initiated not at General Head-
quarters, but in the fleet.

Hermann Bauer must have heard the concept of commerce
war mentioned by commanders of the submarine flotillas. As a
Flottillenchef he might even have seen Blum's memorandum; as
Führer der U-Boote he certainly must have. With the war coming
so soon after the memorandum the idea was fresh in his mind.
This was most probably one of the reasons he raised the issue
so soon with the naval command. Bauer was also perceptive.
He quickly realized that the submarines were having little
success against British warships. No clearly defined submarine
doctrine existed and as F.d.U. he sought to form a doctrine
that would give direction to submarine operations and which
would utilize the submarine to its fullest extent.

During the first two months of the war Bauer brought up
the subject of a commerce war at meetings with Ingenohl and
his staff and occasionally mentioned it in his reports. In
September he went personally to the naval command "in order
to win agreement for the use of submarines against British
trade." The idea was aired but no action was taken. Bauer was informed that a decision on this issue had to come from Berlin, and he let the subject rest for awhile.

At General Headquarters during late August Admiral Pohl hinted about a future blockade of the English Channel in order to put pressure on Britain. It is unclear whether this idea was original, or whether Pohl had heard the idea mentioned by Bauer. Pohl did not state how he would blockade the channel, but only two choices were open: mines or submarines. Also early in the war Admiral Tirpitz decided that it would be necessary for Germany to resort to a commerce war against Britain. He thought trade on Britain's west coast could be attacked and her entire coast line declared blockaded. On 25 September Tirpitz explained his idea to Admiral Müller, whose immediate reaction was negative. Müller understood this action to be neither legal nor proper. Considering Müller's response and the rather low esteem of Tirpitz's opinions at this time, Tirpitz did not advance the matter further.


Tirpitz, *Politische Dokumente, II: 112*, draft of a letter not sent to Ingenohl, 24 September 1914; also footnote 2. There is no record anywhere else of Tirpitz mentioning the submarine commerce war so early. He was aware of the Blum memorandum so the thought was not original. He had very little contact with the fleet at this time but he was usually well informed of events.
British actions also stimulated discussions of a commerce war in the German Navy. German submarines began penetrating the English Channel in September, and the British soon felt threatened in an area they considered vital. Although no ships were lost, some barely avoided being torpedoed. On 2 October the British took countermeasures. The Straits of Dover were mined; the only gap was a narrow passage near the British coast for shipping.

The British action awarded Bauer another opportunity to present his case. He was completely convinced of the necessity of a submarine commerce war. He later wrote that during the first two months of the war his submarines " vainly" sought the Grand Fleet. With the High Seas Fleet inactive, submarines became the only weapon capable of operating in enemy waters; thus it was only natural to seek new ways to increase their impact on the war. As the submarines searched for the Grand Fleet, they watched as streams of merchant ships passed by. All these ships were vital contributors to the British war effort.

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Bauer, Führer der U-Boote, p. 136. Reports from submarine commanders estimated that 80 steamers passed through the Firth of Forth in the mornings and 100 total every day. Similar reports were received about shipping in the Thames estuary. See also Busch and Forstner, Unsere Marine im Weltkriege, p. 408, for thoughts of some the submarine commanders; and Ernst Hashagen, U-Boote Westwärts! Meine Fahrten um England 1914-1918 (Berlin: Verlag von E.S. Mittler & Sohn, 1937), p. 8.
Bauer wrote down his ideas and submitted them in a very forceful report on 8 October to Ingenohl. First of all the F.d.U. charged the British with violating international law. However, his chief concern was apparent. Mining had made the already difficult passage of the channel even more perilous. Submarine operations in the channel would be hindered, and Bauer predicted an increase in submarine losses. He proposed that the British government and public be informed that "if the blockade of the channel...is not stopped in due time, the Germans will begin a submarine commerce war as a reprisal along the entire English coast." Bauer hoped the declaration would be sufficient to open the channel. If this failed, however, he held no doubts that Germany would carry out its threat.

Support for Bauer's ideas increased within the fleet. Two key members of Ingenohl's staff, Konteradmiral Eckermann, his chief of staff, and Kapitän zur See Hans Seebohm, director of the operations division, backed the F.d.U. Once outside the submarine section the submarine commerce war idea swept through the fleet.

Ingenohl already knew about Bauer's ideas from previous discussions and so the report did not catch him unaware. Militarily, the High Seas Fleet commander considered Bauer's idea

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218 Ibid., p. 145; Spindler, Handelskrieg, I: 177-78. Anlage 1.
219 Spindler, Handelskrieg, I: 8.
to be excellent, for it hit Britain in its most vulnerable spot, its trade. Despite this, Ingenohl pointed out, this action involved more than just military concerns; political and international law considerations also had to be weighed. Success or failure depended upon the attitude of the neutrals. What Ingenohl specifically objected to was the "abrupt" sinking of merchant ships by submarines. He thought a submarine commerce war should be carried out according to the rules of cruiser warfare.

Bauer's proposal, with Ingenohl's comments attached, was forwarded to Admiral Pohl at General Headquarters and the Naval Staff in Berlin on 10 October. Ingenohl asked Pohl to reply whether or not he believed Bauer's proposal feasible. Pohl, like Ingenohl, was aware of Bauer's ideas. He and the fleet commander had discussed these on board Ingenohl's flagship, Friedrich der Grosse, during Pohl's last visit to the fleet.

More than two weeks passed before Pohl sent a personal reply to Ingenohl. His initial reaction was to obtain the opinion of his staff in Berlin, which he contacted imme-

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220 Ibid., pp. 4, 179-80. Anlage 2. Compare Ingenohl's letter in Spindler and the one cited in Tirpitz, Politische Dokumente, II: 281-82, Ingenohl to Pohl, 10 October 1914. There is little similarity and Ingenohl comes across much more radical and less concerned with the political consequences of a submarine commerce war. Tirpitz's letter is only an excerpt, leaving one to believe Spindler's letter is incomplete. The only other time both source(s) cite a document it is identical, Tirpitz (283-85), and Spindler (196-97); see also Bauer, Führer der U-Boote, p. 143.

221 Spindler, Handelskrieg, I: 179, 180; and Pohl, p. 75.
lately. The Naval Staff in Berlin, under the direction of Deputy Chief, Konteradmiral Paul Behncke, replied almost as quickly. It did not support Bauer's proposal because the British violations of international law were not severe enough to justify disturbing existing relations. The lives of non-combatants and neutrals, as well as neutral property, should not be endangered. Instead, the Naval Staff suggested that the Firth of Forth and the Moray Firth should be mined immediately.

Pohl accepted the Naval Staff's opinion and sent it off verbatim to the High Seas Command. Pohl sent his personal reply to Ingenohl on 24 October. He repeated the theme of the earlier message. If Ingenohl had wondered whether Pohl actually stood behind the Naval Staff's note, his doubts were banished by this letter. Pohl supported the Naval Staff's stand and reminded Ingenohl that Germany had also violated international law, and after all, the mining of the English Channel was not an "absolute violation of international law." This apparently closed the subject of a commerce war. Bauer's proposal had reached the highest level of decision-making within the German Navy, except for the Emperor, and it had been rejected.

223 Ibid., p. 182. Anlage 4.
224 Ibid., p. 183. Anlage 5.
2. Admiral Pohl Supports A Submarine Commerce War

Economic warfare against Germany played a major role in pre-war British naval operations planning. As the new century brought new weapons, Britain's naval strategy adjusted accordingly. Distant blockade replaced the centuries-old close blockade. As Arthur J. Marder pointed out, Britain's policy shifted from "commerce destruction" to "commerce prevention." Britain's geographical position placed her in a position to effectively shut off German trade by blockading the exits and entrances to the North Sea.

German trade carried in German-owned ships all but ceased after the first few days of the war. The only imports reaching Germany were brought in by neutrals. Britain realized that her economic blockade of Germany would be more effective if this neutral shipping were controlled. When the war broke out Britain announced that she would adhere to the Declaration of London (1909), which she had not ratified--but with certain provisions. Twice within the first three months of the

war Britain amended the list of contraband goods. Each time the list of absolute contraband increased.

Mining of the Straits of Dover not only protected cross-channel shipping and hindered German submarine activity, but enabled Britain to control the neutral shipping entering the North Sea through the English Channel. On 2 November 1914 the Admiralty declared the North Sea a war zone, effective 5 November. All traffic bound for Norway, Holland, Denmark, and the Baltic had to enter the North Sea by way of the Straits of Dover and steer a course set by the Royal Navy to their destination. This would ease the strain on the blockading squadrons in the north and make it easier to check shipping for contraband. Germany would be all but sealed off from the west.

After his rejection of Bauer's proposal, Admiral Pohl sent the submarines into the channel to search for British warships. Although four submarines participated, results, as usual, were minimal; only the small seaplane tender Hermas was sunk.

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226 Siney, pp. 1-12, 21, 23-24, 28-29; Thomas A. Bailey and Paul B. Ryan, The Lusitania Disaster (New York: The Free Press, 1975), pp. 26ff; and James Brown Scott, ed., Diplomatic Correspondence between the United States and Germany, August 1, 1914-April 6, 1917 (New York: Oxford Univ. Press, 1918), pp. 1-2. Immediately after the war opened the United States asked all belligerents if they would comply with the Declaration of London. Germany replied affirmatively, stating she would do so if all other belligerents did likewise.

227 Pohl, Aufzeichnungen und Briefen, p. 82; Corbett, Naval Operations, I: 243.
Pohl's earlier misgivings about the legality of a submarine commerce war vanished after Britain declared the North Sea a war zone. He completely reversed his stand and advocated a policy similar to Bauer's total-war philosophy. This new British violation of international law and neutral rights was too serious to be ignored, he argued. Germany must retaliate in kind. On 4 November Pohl ordered the Naval Staff to "investigate the question whether England can be declared blockaded by mines and submarines, and if this will really be a threat. Every merchant ship that approaches an English port must be exposed to the danger of being torpedoed by submarines; the crew must also feel threatened." The war's first study of a submarine commerce war was underway.

Once he made his decision Pohl moved rapidly and energetically to carry it out. He informed Chancellor Bethmann Hollweg of his proposal. A submarine commerce war, he said, was a reprisal against British actions. Realizing that Bethmann Hollweg would have political objections, Pohl tried to ease the chancellor's fears by minimizing the effects of such action. Germany's justification was Britain's violation of international law. He argued that a submarine blockade was not "especially cruel" just because the blockade runner was destroyed; those running the blockade knew in advance the

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Spindler, Handelskrieg, I: 195. Anlage 10. Pohl's diary is strangely void of any mention of his feeling about British actions and makes no mention of his reversal in attitude. One suspects that his wife edited those parts of his diary which might have placed Pohl in a bad light.
risks if they entered the danger zone. Therefore they "must suffer the consequences." Pohl wondered what the attitude of the largest neutral, the United States, might be, and suggested publishing a declaration of the blockade that granted a twelve day period of grace to allow U.S. ships to leave British ports. He hoped, however, that the announcement alone would be sufficient to reopen the North Sea. Included with Pohl's note to the chancellor was a draft declaration of the announcement of the submarine commerce war which Pohl scheduled for sometime in November. He suggested that a discussion be held on the matter and prodded the Naval Staff to complete their study, informing them that Bethmann Hollweg would also receive a copy.

On 9 November Pohl received the Naval Staff's study which stated that "Conducting a commerce war with submarines is fundamentally agreed to." However, the report went on to list seven points which made postponement of the action to a future date necessary. (1) Carrying out a commerce war along

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Ibid., p. 198; Tirpitz, Memoirs, II: 139. One copy of the draft declaration Pohl drew up is cited in Tirpitz, Politische Dokumente, II: 284-85, undated draft of announcement of a submarine blockade. This declaration allowed only five days for neutrals to leave the war zone. No exception was made for neutral shipping; the declaration was couched in much harsher language than in February 1915. "Since the blockade will be carried out for the most part by submarines, ships attempting to break the blockade will face the grave danger of being sunk without previous warning." The Foreign Office and Naval Staff evidently toned the note down in February.
the entire British coast required more torpedoes than Germany had at the time. Presently there were only 24 reserve torpedoes for U-5 through U-18 and 20 for U-19 through U-34. Torpedoes could be obtained from surface vessels but it was unknown how long this would take. In the meantime submarines should continue activities against the Grand Fleet. (2) The blockade could not be extended to the west coast of France because there were not enough submarines available. This operation might be possible if the smaller coastal submarines were ready in time. (3) Because of the long winter nights operations would be severely restricted. (4) Such a measure could drive the neutrals into the arms of Britain. It was recommended that this risk should only be taken if the land war was successful, or unless the situation was desperate. (5) Britain would surely retaliate in the same manner in Heligoland Bight, the Skaggerak, and the Baltic Sea. (6) This measure was sharper than Britain's and the British might retaliate against German nationals interned in Britain and against captured German sailors. (7) The submarine commerce war should be called a blockade and the rules governing such should be used; submarines could not follow commerce warfare rules effectively. Each time a ship was sunk Germany would be charged with a violation of international law. Instead, a new tactic should be adopted; the waters surrounding Britain should be declared a war zone--like Britain declared the North Sea--and it should be explained to the neutrals and
belligerents that all ships entering this area would be sunk.

A few days later, on 13 November, the Naval Staff sent Pohl an elaborated report containing political objections to the start of a submarine campaign. In view of the fact that such a measure would have far-reaching consequences, the Naval Staff felt that only a guarantee of complete success justified its use. To be effective a submarine commerce war would have to be carried out to the fullest and for a considerable period of time. Did the Navy have enough submarines to do this? Another problem was that of identifying neutral ships from belligerents. Judging from the means available, Germany could not really stop British trade. Hopefully the threat of unleashing the submarines was all that was necessary. To lessen the outcry about the use of submarines and to add weight to the blockade, every available means should be used such as the fleet, cruiser warfare, air attacks, and mine laying.

More important than anything else, in the Naval Staff's opinion, was the continued uncertainty of the land war. Attacks on or damage to U.S. or Italian shipping might bring them into the war against Germany. This should be the deciding issue whether or not a submarine commerce war should be unleashed. Thus the Naval Staff advised: "Wait until successes

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232 Ibid., pp. 28-29.
in the land war give Germany a strong position vis-a-vis the neutrals."

In addition to the Naval Staff's criticism of Pohl, Tirpitz and Müller both opposed him. Not surprisingly Müller remained consistent with his earlier statements, but the real change was in Tirpitz's views. Since September Tirpitz had rethought the issue. He still insisted that a submarine commerce war was necessary; however he did not, as David Woodward asserts, press "relentlessly" at this time for its adoption. Tirpitz felt that the "blockade of England looks too much like a bluff" and urged that submarine commerce warfare be postponed until the summer of 1915. Presently he felt there were not enough submarines or submarine bases to establish an effective blockade. He recommended Germany wait several months until these shortages were corrected. Then, the blockade could begin gradually, starting with the Thames estuary. This would eliminate many problems. Other harbors would be available for use by neutral shipping and the world would gradually become accustomed to the idea of a submarine blockade.

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233 Ibid., p. 29.
234 Tirpitz, Politische Dokumente, II: 155-56, note by Kapitän zur See Albert Hopmann, undated.
236 Tirpitz, Memoirs, II: 140, and Politische Dokumente, II: 286, diary note by Hopmann, 13 November 1914.
Bethmann Hollweg's views on the political consequences of a submarine commerce war were similar to those of the Naval Staff. He too worried about the effect on the neutrals, especially Italy.

Measures like a submarine blockade which are certain to have a negative effect on the attitude of the neutrals and our supplies, can only be undertaken without dangerous consequences when our military situation is so secure that the issue is beyond doubt and the danger of the neutrals joining our enemies can be ruled out.

The chancellor in principle to a blockade because he was shocked over the apparent starvation policy of Britain. However, he could not reconcile the torpedoing of neutral ships with international law or his conscience. He recognized that if Germany completely cut the sea lanes, she would have the extra burden of feeding the Belgians, a burden which would tax her already strained economy. Fundamentally, the Foreign Office agreed with the chancellor, adding that a blockade could be used by Germany only if it was established according to international law.

Pohl's main source of support existed among the officers of the fleet. Bauer's idea had never ceased to be a topic of discussion. The fleet officers, like Pohl believed submarine warfare should be adopted immediately. Continuous pressure

237 Jarausch, Enigmatic Chancellor, p. 272.
238 Ibid., pp. 271-72; Spindler, Handelskrieg, I: 43, 51-53; Tirpitz, Politische Dokumente, II: 768, Tirpitz to Capelle, 16 November 1914; Bauer wrote that Bethmann Hollweg viewed the proposed submarine blockade as an "atrocities" (Ungeheurlichkeit), which would bring upon Germany the indignation of the entire world. Reichsleitung und U-Bootseinsatz, pp. 27-28.
from the officers in the form of memorandums and conversations erased whatever doubts Ingenohl had. A submarine blockade was a "very radical means," he told Tirpitz on 9 November, yet it was the only method to force Britain to make an early peace. Ingenohl reversed his earlier position and predicted few problems with the neutrals. Besides, he rationalized, Germany was fighting for her existence and any trouble which arose should be ignored. The lack of torpedoes was the only dim note. Pohl met with Ingenohl the next day to discuss the conduct of the war in general and must have been encouraged by the fleet's support.

Backed by the fleet, Pohl continued to press for adoption of the submarine blockade. He rejected all counsel that disagreed with his views. In fact the fleet was Pohl's only ally. During the next few weeks a flood of proposals in support of Pohl's idea streamed into the Naval Staff. Towards the end of November Admiral Reinhard Scheer, Commander of the Second Battle Squadron and leading spokesman for the fleet officers, sent a memorandum to Ingenohl in which he called for the submarine blockade. Again, British violations of

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239 Spindler, Handelskrieg, I: 30, 31.
240 Tirpitz, Politische Dokumente, II: 158, Ingenohl to Tirpitz, 9 November 1914.
241 Tirpitz, Memoirs, II: 142; Spindler, Handelskrieg, I: 37.
242 Spindler, Handelskrieg, I: 31-33; Scheer, Germany's High Sea Fleet, pp. 221-23. Chief of Staff Eckermann in the High Seas Command disagreed with the blockade form. He, like Tirpitz, felt that a blockade of the Thames and channel harbors should be attempted first, not the entire British coast. Tirpitz, Politische Dokumente, II: 175, Eckermann to Hopmann, 25 November 1914.
international law were cited as justification for its use. A strike at England's life-blood, her trade, must be made and the submarine was the weapon to do this. Because of the increased operational radius, blockade stations could be maintained near every major British port. Scheer, like others at this time suffered from a tendency to overrate the submarine's ability to enforce a blockade. He also saw no risk in the action and believed the real effect would be in frightening shipping away from the British coast and not in sinking it.

Scheer represented the more radical element in the fleet, one which easily tossed aside moral responsibility and political restraint if it furthered the desired end. In his memorandum Scheer wrote:

The declaration of the blockade is desirable in order to warn neutrals of the consequences. The gravity of the situation demands that we should free ourselves from all scruples which certainly no longer have justification. It is important too, with a view to the future, that we should make the enemy realise what a powerful weapon we possess in the U-boat, with which to injure their trade, and that the most unsparing use is to be made of it.

Ingenohl forwarded Scheer's memorandum to the Naval Staff with glowing endorsements. Scheer "hit the nail on the head. We should not wait until we are faced with ruin." Thus by the end of November the fleet was solidly behind Pohl and exerted as much pressure as it could.

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243 Scheer, p. 223.
244 Spindler, Handelskrieg, I, 34.
In particular the chancellor fretted over the irresponsible attitude he observed in the fleet and feared that Pohl was completely under its influence. On 21 November he expressed his fears in a note to the Foreign Office. He repeated his concern about the reaction of the neutrals and listed three conditions which had to be satisfied before he would consent to the submarine blockade. First, the blockade must be well-planned; second, the military situation on the continent must be favorable to Germany; and last, the Emperor must agree. As it stood the first two conditions were not being met. No well-planned outline for the blockade existed in the Navy, and the military situation at the front was still in doubt. Also, the Emperor had not yet made a decision on the issue.

After exchanging notes with Pohl about the issue, the Foreign Office drew up its own position paper. The measures proposed by the Navy were not justifiable in regard to their effect upon neutral shipping. Passengers and crews must be saved! Civilians should not come under attack. The main question was: how would the U.S. and Italy react? Like Bethmann Hollweg, the Foreign Office proposed three conditions under which the blockade could begin. One, the Navy must be

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Ibid., p. 52.

able to completely stop British trade for a few weeks, something the proposals had so far failed to guarantee; two, the neutrals must be warned prior to the start of the blockade, i.e. there must be a formal declaration of the blockade; and three, the war in France must be successful, Britain and France nearly defeated on the continent, and the channel ports under German control. The paper was drawn up by Under-Secretary Arthur Zimmermann and sent to the chancellor on 30 November.

Before Bethmann Hollweg received the Foreign Office's report, a decision was finally reached. The decision could no longer be delayed and on 26 November Wilhelm was forced to make up his mind. At breakfast that day Tirpitz was able to talk seriously with the Emperor about the issue. Tirpitz tried to convince Wilhelm that a submarine blockade would eventually be necessary. As usual Wilhelm vacillated. At breakfast he agreed in principle to a submarine blockade, but felt it wise that it be delayed until Germany could effectively carry it out. However, at dinner in the evening he completely changed his mind. Dissuaded by Karl Georg von Treutler, Bethmann Hollweg's representative at General Headquarters, Wilhelm declared his complete disagreement with the proposal. Although this was not an official order, Pohl

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Tirpitz, Memoires, II: 274-75, and Politische Dokumente, II: 287, diary note of Hopmann, 26 November 1914; Pohl mentioned dining with the Emperor but, curiously, made no reference to the Emperor's decision on the submarine blockade. Considering that Pohl had worked for almost a month to get a favorable decision, some reaction should have occurred. One suspects the hand of his wife again. Pohl, p. 92.
heeded these words and allowed the issue to quiet down, but not die out.

As it stood, Admiral Pohl and the fleet supported the early adoption of the submarine blockade. Opposed to it were Tirpitz, the Naval Staff, Bethmann Hollweg, the Foreign Office, Müller, and the Emperor. Tirpitz supported the blockade but desired its postponement a few months until it could be implemented effectively. The Naval Staff, Bethmann Hollweg and the Foreign Office all were concerned about the political repercussions of a blockade, although supporting the blockade in principle. In fact, Bethmann Hollweg and the Foreign Office set conditions that if met would have made the blockade unnecessary to defeat Britain. Müller's position is more obscure, however he seemed to oppose the blockade outright. Wilhelm, who was under Müller's and Bethmann Hollweg's influence, fluctuated one way to another. Pohl, who overestimated the submarine's ability to enforce the blockade, was hindered by the fact that no blockade plan existed. One of the conditions set by Bethmann Hollweg and the Foreign Office was that the blockade had to be well-planned and effective. Only one detailed plan was ever drawn up before February 1915 and it did not guarantee complete stoppage of British trade.
3. Submarine Operations: November-December 1914

While the debate over submarine warfare raged within the German Navy, submarine operations continued at sea. On 20 October the first merchant ship was sunk by U-17. The Glitra, a British steamer sailing near the Norwegian coast, was stopped and sunk by Oberleutnant zur See Feldkircher, who followed the rules of cruiser warfare. The crew was given ten minutes to abandon ship and then towed to within easy rowing distance of the Norwegian coast. On his return to base Feldkircher feared a courts-martial or at least a reprimand for exceeding his orders. Neither were forthcoming and his action was condoned by Ingenohl and Bauer.

Bauer realized that sending submarines after warships was a futile operation. It was difficult to find the Grand Fleet in the North Sea and the English Channel was a dangerous area to operate in. The F.d.U. believed that the risks involved in searching for warships and the time spent in this pursuit were not proportionate to the results. He wanted to send his submarines into the channel to attack British troop transports. There was little direction in operations planning from above. Various orders, personal wishes and suggestions for special assignments came to Bauer from General Head-

\[\text{Busch and Forstner, } \textit{Unsere Marine im Weltkriege}, p. 386; \text{ Gray, } \textit{Killing Time}, pp. 64-65; \text{ and Thomas, } \textit{Raiders of the Deep}, pp. 34-35.\]
quarters, giving evidence that the naval high command was not very unified and had little understanding for the submarine. Bauer ignored many of the naval commands suggestions and formed his own plans and orders for submarine operations in the channel. Hoping that each appearance would cause uneasiness and disturbance in Britain, Bauer sent more and more submarines into the channel area. However, such patrols frequently brought the F.d.U. into conflict with General Headquarters.

The orders Bauer issued to his submarine commanders were shaped by the existing conditions in the channel. The danger of attack by Allied patrol vessels precluded a search of the attacked ships. If a commander thought he saw troops or clearly discerned war material on the decks of a steamer he was to assume it was a troop transport. The first orders to shoot merchantmen without warning were issued in October 1914 and led directly to the mistake. Rudolf Schneider in U-24 mistook Belgian refugees on the deck of the French liner Amiral Ganteaume for British troops and promptly torpedoed the ship without warning. The problem that was to plague submarine commanders was exposed early in the war. A submarine commander could not tell by looking through his periscope whether a ship was a belligerent or neutral. There were two alternatives:


250 Ibid., pp. 128-39; and Gray, pp. 66-67.
either stop and search all merchantmen as dictated by international law, or sink every ship without warning. This incident was probably one of the reasons the naval high command opposed attacking transports in the channel. Bauer, whose only concern was how to get the most from his submarines, issued orders that could have had grave political consequences for Germany and which he issued without authority.

Despite the sinking of *Amiral Ganteaume*, Bauer continued sending submarines into the channel. By early November he was confidant of Admiral Pohl's support.

On 19 November Bauer ordered one of his young aces, Otto Hersing, commander of U-21, to operate off Le Havre against transports, warships, and merchantmen loaded with war material. The F.d.U. made his choice wisely. Hersing was a commander of excellent discretion and the chances of an international incident were minimal. Hersing sank two ships, the British steamers *Malachite* (23 November) and *Prime* (26 November). In rough seas Hersing succeeded in following cruiser warfare rules by ascertaining that both ships carried contraband before he sank them.

The *New York Times*, surprised that submarines were reported so far westwards, proclaimed the sinkings "one of the most daring feats yet performed by German submarines." No special mention was made of the fact that the ships were mer-

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251 Spindler, *Handelskrieg*, I: 30-31; Thomas, pp. 51-52.
chantmen, probably because Hersing, a very humane officer, followed the rules of international law and both crews were rescued. In a follow-up article nine days later the Times made no comment on the French Ministry of Marine's statement that U-21's actions "demonstrated...the important possibilities of submarines as commerce destroyers." The lack of reaction by the Times must have been encouraging to Pohl and Bauer. However, the Emperor's decision on 26 November ended this type of operation for awhile.

Submarines again concentrated on finding and sinking parts of the Grand Fleet, participating in special missions and working with the battle-cruisers on hit and run raids along the British east coast. These raids were partly designed to lure the Grand Fleet out in pursuit of the cruisers over mine fields or through submarine-infested waters. The Scarborough-Hartlepoole raid of 16 December was one such action; results by the submarines were negative. This upset Wilhelm, and he complained about the submarines' failure to come to "close quarters" with the British forces. Evident-Wilhelm had not yet realized that modern warships taking precautionary measures were nearly impossible to attack from a submarine.

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253 Ibid., (5 December 1914), p.2.
One submarine, U-18, was lost searching for the Grand Fleet. As U-18 approached Scapa Flow it was spotted and rammed in the Pentland Forth on 23 November. Luckily all but one of Kapitänleutnant Heinrich von Henning's crew managed to escape. Other submarines narrowly avoided a similar fate. Bauer's fears of the British mine fields were justified. On 9 December U-11, en route from the uncompleted base at Zeebrugge to the channel, struck a mine as did U-5 nine days later. German submarine losses now stood at five.

Late in 1914 danger took a new form for the submarines. At that time the first British "mystery" or "Q" ships were being readied. A number of merchantmen and fishing craf t were armed with concealed light quick-firing guns and sent to sea in areas supposedly frequented by German submarines. Later in the war many unsuspecting submarine commanders watched as what appeared to be an innocent merchantmen lowered its colors and raised the white ensign while proceeding to blast the submarine from the seas. On 29 November S.S. Vittoria, the first such vessel, was launched.

4. Coastal and Mine Submarines

On 8 August 1914 Admiral Tirpitz ordered the U-Boots-Inspektion to investigate the question of building a large number of small coastal submarines. Few inside Germany fore-
saw a long war, so larger boats, which took too long to build, appeared impractical. The U-Inspektion's initial report was disappointing. It estimated that the coastal submarines would require a lengthy construction time and be of low military value. Still, Tirpitz and the Reichsmarineamt continued to pursue the issue. The Army's progress in Belgium increased the need for small coastal submarines to protect the additional coastline (the Army's flank) from attack.

Tirpitz had rejected coastal submarines before the war as unsuitable for Germany's needs, yet within months after the war began he was forced to build them. On 15 November Germaniawerft received orders to build the new coastal boats UB-1 through UB-8, while Weser built UB-9 through UB-15; ten days later UB-16 and UB-17 were also ordered from Weser. Most of the boats were built in four months. They were small, compared to Germany's high seas boats, displacing 127 tons on the surface and approximately 150 tons submerged. Armament consisted of two forward torpedo tube with one 15.5 inch torpedo for each tube; operational radius was 750 miles; top surface speed was a slow 6.5 knots; underwater it made 5.5 knots. Only one officer, usually an Oberleutnant zur See, commanded a crew of thirteen. These boats were so small that

256 Spindler, Handelskrieg, I: 167-68. The German Navy also wanted the Belgian harbors as a base for their high seas boats because this would cut down on the time en route to sea and the amount of fuel used thus increasing the submarine's operational radius and endurance in enemy waters. Spindler, Handelskrieg, II: 1-2.
it was feared they would have a difficult cruise from Germany to Belgium, so they were built in three parts and shipped by rail to Antwerp for assembly. These boats eventually became the U-Flottille Flandern, under command of Kapitänleutnant Karl Bartenbach, in late March 1915.

One other type of submarine was built by Germany during the first months of the war: mine submarines. The idea of placing mines on submarines was not new; several countries, including Germany, had investigated the possibility before the war. Late in November orders went out to Weser and Vulkan for fifteen mine submarines, the UC boats. Construction time ranged between six and eight months. The boats were slightly larger than the UBs, displacing 168 tons on the surface and approximately 220 tons submerged; they were also slow, getting 6.5 knots on the surface and 5.7 knots underwater. Their operational radius was 400-450 miles. Besides twelve 260-330 pound charge mines that could be sown while on the surface or submerged, the only other armament was one machine gun. When these boats were ready they were divided between the Flanders command and the newly created commands in the Mediterranean Sea.

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257 Ibid., I: 168, and II: 11, 1-13, 64-67.
258 See Nauticus, 1912, p. 65.
5. The Tirpitz-Pohl Clash: November to the Wiegand Interview

Relations between Admirals Pohl and Tirpitz worsened despite the fact they both supported the submarine blockade. However, even on this issue they differed and both struggled to have their own views accepted at General Headquarters. Cooperation between them never really existed. Time spent intriguing could have been spent on studying and developing operations plans for the submarine blockade, something that virtually overlooked.

On 24 November Tirpitz noted in his war diary that relations with Pohl were very strained. "We don't talk about the service together—in fact I am out of it." However, Tirpitz was a man of action, including intrigue. Early in November he instigated a movement to replace Admiral Ingenohl. He wanted Ingenohl to be more active with the fleet or else be replaced by Pohl, who had previously commanded the fleet and had an excellent record as an active commander. Once Pohl was gone from General Headquarters Tirpitz hoped to take his place as Chief of the Naval Staff. Admiral Müller was informed of Tirpitz's idea but waseily through this transparent scheme.

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259 Tirpitz, Memoirs, II: 273-74; see also Pohl, pp. 85-86, 88, 91.
Müller wanted Pohl at General Headquarters not in the fleet. "Personally I have found that Pohl does his job here quite adequately even if at times he is unlucky in his audiences with His Majesty. I think he is as clear-headed when it comes to the military situation as the Secretary of State." In other words, Pohl as Chief of the Naval Staff was easier to control than Tirpitz would be and Müller had a greater influence on the conduct of the war while Pohl was at General Headquarters.

What rankled Pohl more than anything was Tirpitz's interference in operations planning. His complaint was similar to that made earlier by Tirpitz. "...ideas I have he takes and acts on as if everything originated from him."

Especially irritating for Pohl was Tirpitz's support of the submarine blockade, only in a different form. Regardless of whether Tirpitz's arguments against an immediate submarine blockade were sound, Pohl became less and less able to accept the Grand Admiral's advice on any matter. Pohl became obstinate and determined to see his plan carried out in spite of Tirpitz and in order to prove that he was conducting the war.

Pohl, however, tried one last time to work with Tirpitz. For almost three weeks he allowed the subject of the submarine

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262 Pohl, p. 86.
blockade to lie. Then he opened another campaign for its approval. This time he thought his plan had a better chance of being approved if Tirpitz also supported it. On 15 December he wrote a letter to Tirpitz in which he sought to convince the Grand Admiral of the need for an early adoption of the submarine blockade. Pohl knew that Tirpitz supported the idea, but that he wanted to wait until Germany could effectively carry it out. He told Tirpitz he would prepare and build up the submarine forces during the interval between then and the end of January, the time he selected for the start of the blockade. The entire coast of Britain and Ireland would be blockaded; a fourteen-day warning would be issued in the Norddeutsche Allgemeine Zeitung simultaneously with notes delivered to the neutrals. A similar note was sent by Pohl to the Foreign Office.

Tirpitz replied the next day. As expected he did not oppose the submarine blockade, only its timing. Political objections were still in the forefront, he noted, but suggested that Pohl continue preparations for the blockade. Tirpitz would not help. Pohl replied in a letter on 19 December. He discounted Tirpitz's political objections and

263 Tirpitz, Politische Dokumente, II: 287-88, Pohl to Tirpitz, 15 December 1914.

264 Ibid., pp. 288-89, Tirpitz to Pohl, 16 December 1914; see also Tirpitz, Memoirs, II: 141-42.
pressed the Grand Admiral to agree to the date set. This is a good example of the non-cooperation between the two. Tirpitz, who in fact had no political objections whatsoever, just refused to lend his support to Pohl.

Also on 19 December Pohl sent another note to the Foreign Office in which he claimed the recent successes on the eastern front had stabilized the military situation, thus satisfying one of the major conditions set in November. The Foreign Office drew up a memorandum in reply to Pohl and Bethmann Hollweg presented both his and the Foreign Office's position to Pohl on 27 December. The chancellor agreed with the idea of the blockade and acknowledged that Britain committed serious violations of international law, but he still could not justify in his own mind the political risks of torpedoing neutral ships. Let the British continue to provoke the anger of the neutrals, he suggested. If Germany used a blockade, the neutrals' anger would be transferred to her. "It is a question not of if, but rather of when the measure—without damaging our position—should be used. Pohl's arguments did not alter his view of the situation.

265 Ibid., pp. 289-90, Pohl to Tirpitz, 19 December 1914.
266 Ibid., p. 290, Pohl to Jagow, 19 December 1914.
267 Ibid., pp. 290-92, 292-95, undated memorandum by the Foreign Office drawn up by Johannes Kriage, Privy Counselor in the Legal Department, and memorandum by Bethmann Hollweg, 27 December 1914; see also Spindler, Handelskrieg, 1: 54-55; and Scheer, Germany's High Sea Fleet, p. 223.
6. The Wiegand Interview

Before late December 1914 few allusions were made in the German press to a submarine blockade of Britain. The British blockade already pinched the German masses, and there were outrages for retaliation, but the submarine was largely over-

looked as a possible means. On 22 December, however, a statement of Tirpitz's aroused the German press and people to demand the use of a submarine blockade against Britain.

On 21 November an American reporter of German ancestry, Karl von Wiegand, interviewed Tirpitz at General Headquarters. During the interview--later published in the U.S. and Britain--Tirpitz mentioned the possibility of a submarine blockade of Britain. Tirpitz later claimed that he only wanted to sound out and prepare public opinion in the United States for the introduction of the submarine blockade. The biggest stumbling block to its adoption was the uncertainty of the United States' attitude. If this could be ascertained, the


the fears of Bethmann Hollweg and the Foreign Office might be quieted.

Tirpitz's actual motive was a different one. Frustrated, with virtually no direct influence on the conduct of the war, he saw an opportunity to influence the direction of the war and to upstage his chief rival, Admiral Pohl. His lack of judgment, however, was aggravated by the fact that nobody in the Navy's Nachrichtenbüro or the Foreign Office who saw the text of the interview stopped it or least sent it to a higher authority for approval.

Tirpitz's interview caused a sensation among the German people. Because of his prestige his views were more readily accepted, and the public soon believed that the submarine blockade, if immediately and properly begun, could quickly force Britain to ask for peace. As Matthias Erzberger related, the Wiegand interview "aroused the belief that unrestricted submarine warfare is the best means to bring the war to a rapid and successful close." The clamor never died. Bethmann Hollweg, who had no knowledge of the interview until it was too late to prevent its publication, now

271 See Tirpitz, Politische Dokumente, II: 621-23.
273 Erzberger, Erlebnisse im Weltkrieg, p. 209.
faced public as well as Navy pressure for adoption of a commerce-raiding strategy.

Just as important was the Wiegand interview's effect upon the relationship of Tirpitz and Pohl. It was accepted at General Headquarters by most everyone but Tirpitz that all matters concerning the conduct of the war were under the jurisdiction of Admiral Pohl. When Tirpitz discussed publicly the issue of a submarine blockade without first acquiring Pohl's approval, he overstepped his authority. The already poor relations between the two highly sensitive and jealous men deteriorated even more.

Pohl's reaction to the Wiegand interview was shock. He wrote in his diary on 22 December:

It is entirely unheard of. The matter is still quite secret, still in preparation, and still politically not clarified. It is neither politically nor militarily proper to speak about, and it is not Tirpitz's affair. He will receive the greatest injury possible from it, in any case he has ruined the surprise which lies in this stroke. I have not kept him restrained like I think I should about such indiscretions. The chancellor will be stirred up over this and he has hurt my ability to conduct the war by his actions.

On 23 December Pohl met with the Emperor, who was extremely annoyed with Tirpitz and suggested releasing a statement calling the entire affair "nonsense." Pohl, however, reject-

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For a discussion of who had jurisdiction over the conduct of the war, see Spindler, Handelskrieg, I: 36, 38. Pohl, Aufzeichnungen und Briefen, p. 93.
ed the idea and persuaded Wilhelm not to do so, realizing that he planned to use the submarine blockade soon and to issue a statement denouncing it would create a situation awkward for himself.

That same day Müller and Bethmann Hollweg discussed the interview. The chancellor spewed with "justifiable scorn" for Tirpitz as he explained the circumstances under which the interview became public. Müller expressed no sympathy for the Grand Admiral, noting that "Tirpitz did not deem it necessary to discuss this matter with Pohl, in whose province this matter fell. Pohl was rightly incensed....I personally can find only one explanation for the interview, that the ambitious Tirpitz wished to draw attention to himself....

Tirpitz, who never admitted that the Wiegand interview was a mistake, rightly feared that the chancellor and Müller would attempt to stir up trouble for him "via Pohl who is putty in their hands.... These men saw an opportunity to play Pohl and Tirpitz against one another, using Pohl's excited state of mind to foment trouble. Although Pohl allowed himself to be used a while longer, he became increas-

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276 Ibid., pp. 93-94; see also Görlitz, The Kaiser, p. 51; and Bauer, Führer der U-Boote, p. 160.
278 Tirpitz, Memoiras, II: 279.
279 Tirpitz, Politische Dokumente, II: 295, diary note by Korvettenkapitän Johann Bernhard Mann, 3 January 1915.
ingly more independent and secretive as he schemed to have the submarine blockade adopted by the end of January 1915. He made a decision that was to effect the course of events. Pohl decided that he would no longer work with Tirpitz, no longer submit his operations plans for the Grand Admiral's scrutiny, and no longer allow Tirpitz to frustrate these plans. In short, Pohl ended his cooperation—or what little there was of it—in the conduct of the war.

Tirpitz's conspiring had succeeded in planting doubts in Wilhelm's mind about the leadership qualities of Ingenohl. The Emperor considered replacing him with Pohl and told the Chief of Staff his idea. Pohl disliked the idea and feared it less it prevent him from getting the submarine blockade adopted before he left General Headquarters.

This was the state of affairs when Admiral Müller suggested to Wilhelm that Pohl submit a report clarifying the "future conduct of the war in the North Sea and Baltic." The report would include a consideration of the submarine blockade.

280 Pohl, p. 95. About his future relation with Tirpitz, Pohl said: "I will no longer discuss matters with him."
281 Ibid., p. 95.
CHAPTER VI

DECISION FOR COMMERCE WAR

1. The Emperor's Decision of 9 January

Once informed by Müller that an official audience with the Emperor would be held in order to clarify the situation at sea, Admiral Pohl began a tedious preparation of his case for the submarine blockade. The task absorbed all his time and energy. He apologized to his wife for not writing, explaining that the preparation of the memorandum "takes precedent over all else." By 3 January the memorandum was nearing its final form. At this time it would have been unwise for Pohl to bypass Tirpitz since the Grand Admiral had been kept informed by Pohl the last two weeks and to suddenly leave him aside would appear too suspicious. Pohl sent Tirpitz a copy of the finished memorandum (the last time Tirpitz was treated in this manner) since Pohl still hoped to swing him around to his position. Pohl discounted Bethmann Hollweg's political objections. Germany, he urged, had the

283 Pohl, p. 97.
284 Ibid., p. 99; Tirpitz, Politische Dokumente, II: 295; see also Tirpitz, Memoirs, II: 282-83.
means in hand with which to bring the war to an end and it should be used without regard to the neutrals.

An exchange of letters followed during the next two days. Although Tirpitz agreed with Pohl that the submarine blockade was the best means remaining at Germany's disposal which could seriously injure Britain, he refused to change his stand and come to Pohl's aid. Pohl, who had come around to Bauer's view, replied that the present manner in which the submarines were used did not produce results. The conference with the Emperor was imminent, however, and Pohl realized that he could not count on Tirpitz's support.

During the entire time the submarine blockade had been under discussion, Bethmann Hollweg stood in opposition to its use. The attitude of the neutrals weighed heavily in determining his position. If Pohl was ever to get the submarine blockade adopted, it was the chancellor whom he must convince of its necessity. On 5 January Pohl and Bethmann Hollweg met at General Headquarters to discuss the political effects of the blockade. Repeatedly Pohl's arguments met with rejection from the chancellor. Pohl's reasoning that British violations of international law justified the blockade was not accepted. "The people will not understand" your refusal to launch the

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286 Ibid., pp. 295-97, Tirpitz-Pohl correspondence; Pohl, p. 99.
submarine blockade, cried a very frustrated Pohl. All the chancellor would agree to was to consider the issue, and the discussion ended.

Meanwhile, on 7 January Pohl presented his *Immediatbericht* to Wilhelm, who then considered the matter for two days before listening to arguments for and against the submarine blockade. A tense Pohl nervously awaited the conference of 9 January, wondering whether the Emperor would agree to the proposal or continue to hold back the submarines.

Admiral Müller proposed the conference as part of a plan to settle the submarine issue once and for all. From the beginning he had opposed the blockade. Unhappy over the resurgence of the issue in December and its publication to the world by Tirpitz, Müller sought an imperial decree, stronger than the 26 November decision, to dispose of the issue. This was the motive behind his suggestion of 26 December. Müller and the chancellor shared similar views on the issue of the submarine blockade, therefore Müller schemed to influence the Emperor in Bethmann Hollweg's favor. On 8 January, the day before the conference, Müller and Bethmann Hollweg planned their strategy. Müller advised the chancellor how he could

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287 Pohl, p. 99; Tirpitz, *Politische Dokumente*, II: 295, diary note of Mann, 3 January 1915. At this time Bethmann Hollweg was at least consistent in his attitude towards ruthless warfare as he also opposed the use of zeppelins to bomb London.

288 Pohl, p. 100; Spindler, *Handelskrieg*, I: 58.
best present his objections to the Emperor and assured him that he would be present at the conference to see that all went well. A sleepless night of anticipation followed for Müller.

The conference at General Headquarters on 9 January did not go favorably for Admiral Pohl. The Chief of the Naval Staff had organized his memorandum so that the submarine issue was the last to be discussed and thus could be given more emphasis. As he presented his case he repeated the same arguments he had used during the last two months. Bethmann Hollweg then responded "calmly and skilfully," emphasizing the uncertain political situation and drawing attention to the effects of the blockade on the neutrals. A debate ensued between the chancellor and Pohl in which the more experienced negotiator, Bethmann Hollweg, held the upper hand. However, Wilhelm had already reached his decision. There would be no submarine blockade at present. The political situation was still too uncertain.

Disheartened, Pohl left the conference—thanking Müller for his support. But Pohl had not aided his own cause at all. He desired the submarine blockade so badly that he allowed his emotions to take command, presenting his case with "more

290 Ibid., p. 54; see also Jarausch, Enigmatic Chancellor, p. 272; and Spindler, Handelskrieg, I: 58-60.
oathos than skill." He was no match for Bethmann Hollweg and Müller. The next day, 10 January, the official decision
to postpone the blockade was announced.

The significant result of the conference was not the
postponement of the submarine blockade, but rather the effect
it produced on the future actions of Admiral Pohl. The thanks
he expressed to Müller for his support were empty, a cover
for his real feelings. At the conference Pohl finally saw
through Müller, realized how Müller had been using him against
Tirpitz and had manipulated Wilhelm behind the scenes. Müller
left Pohl in the lurch during the conference, not coming to
his aid as Pohl had expected in the debate with Bethmann
Hollweg, a civilian. Abandoned, Pohl presented his case
"without any help" from Müller.

Müller's intriguing backfired. Just as Pohl earlier de-
termined to bypass Tirpitz, he now decided to pursue his
drive for the submarine blockade without taking the Chief of
the Naval Cabinet into his confidence. Pohl broke completely
with General Headquarters.

2. Bauer's Plan of December 1914

Hermann Bauer played a relatively minor role in the sub-
marine blockade issue during November and December. After he

291 Gbrlitz, The Kaiser, p. 54. It seemed that Pohl was
not adept in personal audiences with the Emperor. This was
not the first time his reports either bored, irritated, or
just had no effect on Wilhelm. Ibid., pp. 35, 37.
292 Pohl, p. 100.
initiated the issue in October his only involvement was the few operations planned off the French coast in October and November. Since the naval high command was disunified and did little to investigate the possibility of a submarine blockade of Britain, Bauer took it upon himself to do so. It is noteworthy that the Naval Staff did not make an operations study until late January 1915. During most of December Bauer worked on completing a detailed study of the submarine blockade which he submitted on 27 December. Admiral Ingenohl forwarded the report to the Naval Staff on 1 January. It is likely that Admiral Pohl received the report too late to have any real influence on his own memorandum, but Bauer's report must at least have been mentioned at the 9 January conference.

It was evident that Bauer put much time and research into his report, for it was extensive.

(1) Extent of the Blockade. This first part consisted of a list of the seven most important British harbors and the approximate tonnage of commerce traffic they received each year. The seven ports were: Newcastle, Hull, the Thames, Southampton, Plymouth, Bristol and Cardiff, and Liverpool. Glasgow and the Firth of Forth were already restricted, the former by mines and the latter because of its use as a war harbor.

(2) Number of Submarines Required for the Blockade. At present four submarines were satisfactory.

(3) A "Blockade" instead of a "Commerce War." The submarine was unsuited for a commerce and therefore the Naval Staff's opinion of 9 November was correct.

(4) Estimation of the Expected Results. In order to evaluate the possibility of "failure," which the Naval Staff feared, it was first necessary to determine what the Naval Staff considered "success." Success would not mean the complete destruction of British trade, but only the deterrence of shipping and its ensuing decrease, which would result in higher market prices, uneconomical means of transporting goods, and higher insurance rates. The blockade would have to be considered a failure if the damage to British trade was less than the damage resulting from Germany turning the neutrals into enemies. Consideration of the neutrals would continue since the Naval Staff desired first to establish the effect an unfriendly attitude on the part of the neutrals would have on the war.

Retaliatory measures might follow if Germany endangered the "conditions essential for life" in Britain. "Since the war cannot be brought to a successful conclusion without such measures as the submarine blockade, the risk must be taken. It was unlikely the British would retaliate with their own commerce war in the Baltic Sea. The blockade would be successful. "The size of the success would depend upon the energy with which the blockade was carried out and its duration."

(5) Action against the Neutrals. Prize ordinances required that for a blockade to be legal it must be effective, and it must be impartial. No special exceptions should be made for neutral shipping because then all shipping bound for Britain would fly a neutral flag. Neutrals might protest about neutral goods on enemy ships and increased insurance rates which also affect them. In any case, if special regard was given to neutrals, night attacks, where it was difficult to identify the nationality of the target, would fail and the entire blockade would be weakened.

(6) Trade Lanes between Neutrals. Once the blockade was established no concessions could be granted the neutrals except for special for special trade routes between them.

(7) The United States. The Naval Staff feared the U.S. would be severely affected by the blockade and would intervene in the war against Germany. However, "The United States' military intervention represents no threat to ourselves." The alternative for the U.S. was economic pressure on the belligerents, specifically Britain. Britain would be forced to relax her blockade of Germany, thus relinquishing her chief weapon. Germany should voluntarily terminate her submarine blockade if this happened.

(8) Carrying-Out the Blockade. This would be done in accordance with the importance of the individual British harbors.

A. Thames—This was the nearest harbor. To station a submarine there was logical but, because of British defensive mining,
its operation would be restricted. Therefore, one submarine should be stationed far north between Farn Island and the Tyne to cut off southbound traffic to Newcastle and Hull. Another submarine should be stationed in the western English Channel between St. Alban's Head and Cap de la Hague on the north coast of France to cut off traffic headed north for the Thames and for Southampton. B. Bristol Channel-One submarine should be stationed in the Bristol Channel at all times. C. Irish Sea-One submarine should be stationed in the Irish Sea at all times. If the trade lanes shift, the stations should be shifted accordingly. Distribution of the submarine stations was by no means final.

(9) Moment to Begin the Campaign. The number of available submarines permitted the blockade to begin at the end of January 1915. Smaller results must, of course, be expected during the winter months. The date was also dependent upon the Reichsmarineamt's completing the stocking of torpedoes and the preparation of the older torpedoes for a commerce war. At present this was unfinished.

The blockade would also be more effective if merchant ships were not fired upon immediately after the expiration of the deadline, since at that time the ships would be extremely alert and prepared for attacks. Attacks should be delayed a few days until the alertness had decreased; Germany's action would be mocked in the foreign press. The effects of the first sinkings would then be immense, the public startled.
Since the blockade stations could not be continuously occupied, it was not necessary that the blockade be effective immediately. Also, frequent change in the time tables of the stations should be made as well as a shift of the stations. Maintain uncertainty among shipping.

Bauer's estimate of the number of available submarines considered the amount of time spent under repair, the new submarines still completing training, and the limited value of the older gas boats. Gas boats were assigned to patrol the east coast of Britain while the more distant stations were assigned to "the core of the submarine forces," the diesel boats. Considering the travel time to and from station, the amount of time each submarine actually spent on patrol was about one week. Experience had shown Bauer that stooping and searching vessels exposed the submarine to prolonged danger while it remained motionless on the surface. Bauer saw it as an "indispensable condition" of the blockade that submarines be allowed to sink merchant ships without previous warning. Only at night should a submarine attack on the surface. The difficulty of distinguishing neutrals from belligerents led Bauer to support the sinking of all ships, regardless of nationality, in the blockade area.

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This figure differs with a later figure given by Bauer.

Spindler, Handelskrieg, I: 38-41.
Admiral Ingenohl basically approved Bauer's plan and his proposed blockade stations. He wished the blockade could be launched with more than four submarines but realized that this was impossible. The date suggested by Bauer for the start of the blockade, the end of January, was during the poorest season of weather and consequently smaller results should be expected until better weather and more submarines were available. Nevertheless, the blockade should begin soon.

Two weeks later Ingenohl asked the Naval Staff for permission to launch a blockade along the north coast of France against enemy troop transports and munitions ships in order to "accustom the public of the entire world to the thoughts of a submarine blockade." The operation was not risky. Neutrals bound for France could sail to the western and south-eastern coasts, completely avoiding the blockade. The High Seas Command was eager to begin the blockade and pressed for a decision. Hermann Bauer, in the meantime, planned his own small operation in anticipation of the blockade beginning at the end of January. However, he did not ask the Naval Staff for approval.

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Ibid., pp. 62-63; and Bauer, Führer der U-Boote, p. 131.
3. Submarine Activities and Preparations for the Blockade: January 1915

Ushering in the new year was the sinking of the pre-dreadnought *Formidable* on 1 January by U-24, commanded by Kapitänleutnant Rudolf Schneider. Once again British carelessness enabled a German submarine to score a success. But the German submarines were not without misfortune in January 1915. U-31, recently readied for war patrols, never returned from one in mid-January, another apparent victim of British mines. Tragedy struck the German submarine fleet. While returning to base after a short patrol terminated by foul weather, U-22 mistakenly identified U-7 as a British submarine and torpedoed her. German submarine losses now stood at seven.

Hermann Bauer again showed his initiative in conducting the submarine war. On 14 January the F.d.U. ordered U-21, with its capable commander Otto Hersing, to sail into the Irish sea and sink a few British merchant ships. This order went far beyond any existing orders Bauer had from the naval high command.

Before Hersing was prepared to leave, Kapitänleutnant Konstantin Kolbe, commander of U-19, sank the *Durward*, a

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299 See Thomas, *Raiders of the Deep*, pp. 170-72, for more information on the sinkings.
British steamer bound for Rotterdam. Kolbe chased the fleeing ship and after catching up with her sank her according to cruiser warfare rules by using explosive charges to sink her after the crew had disembarked. The crew was then towed toward the British coast. The sinking caused a mild stir in the British press, who suspected the beginning of the war on British trade as warned by Tirpitz.

Hersing sailed from Germany on 23 January, arriving in the Irish Sea late in the month. After completing his other assignments, Hersing stunned the British by sinking three steamers in one day just a couple of hours' sailing from Liverpool. The *Ben Cruachan*, *Linda Blanche*, and *Kilcoan* were all despatched according to cruiser warfare rules and their crews rescued. At first the British press was baffled. Few papers believed the submarine's operational radius enabled it to reach that far. Some suspected U-21 of operating from a mother ship stationed near the Orkneys. Soon, however, they admitted that they believed the claims made by Admiral Tirpitz for the large operational radius of the German submarines.

Bauer's predictions concerning the effect of the submarine on the British economy seemed to be confirmed by what


happened after U-21's raid. It was reported on 2 February that already high food prices "will go still higher if any more raids are made." Shipping was partially disrupted. The West Dublin Steam Packet Company temporarily postponed all scheduled sailings for Belfast, Glasgow, and Liverpool. Other companies delayed sailings for awhile.

Meanwhile Bauer sent U-20 to the North coast of France to intercept British troop transports, supposedly bringing 50,000 reinforcements to the western front. Neither Bethmann Hollweg nor the Foreign Office objected to this purely military operation; however, they delayed their consent because of objections made by the General Staff, who feared the blockade would hinder shipments of American foodstuffs to Belgium. But, neither the High Seas Command nor Bauer waited for approval. From 29 January to 4 February U-20 patrolled the Seine estuary. If Bethmann Hollweg or the Foreign Office had seen the instructions Bauer gave to U-20's commander they would have been extremely upset. The F.d.U.'s instructions left much to the discretion of the commander, who was to sink troop transports and operate against merchantmen in the same way as previous patrols. He could dispose of merchantmen by torpedoing without warning since it was assumed that all merchantmen in the area carried military material. In addition,

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he was to sink all large steamers that approached the French coast. On the same day U-21 was causing alarm in the Irish Sea, U-20 sank three British merchantmen. Unlike the ships sunk by U-20, Tokomaru, Icaria, and Oriole were torpedoed without warning, the first two during the day and the last at night. Worse was yet to follow. On the night of 1 February U-20's commander, believing he had a large troop transport in front of him, fired a torpedo at the Asturias. Too late he saw the large illuminated red crosses of the hospital ship. Luckily the torpedo missed the ship, which arrived safely in port.

One cannot help but compare the patrols of U-20 and U-21. Both the benefits and hazards of a submarine blockade are exposed. Otto Hersing in U-21 showed that a submarine could still be effective when used according to cruiser warfare rules. British shipping was partially disrupted and the public alarmed. His patrol was a material and psychological success. On the other hand, the patrol of U-20 demonstrated what can happen when a commander with less discretion and responsibility receives orders that are very broad and is left to his own judgment. Indiscriminate sinkings could have

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303 Spindler, Handelskrieg, I: 60-63. Official permission from Bethmann Hollweg and the Foreign Office was not granted until 2 February for this operation.

304 Ibid. Bauer claimed that the Asturias was escorted by two French torpedo boats which gave the impression to U-20's commander that she was an important ship. However, U-20's war log cited in Spindler, p. 64, made no mention of the torpedo boats. Bauer, Führer der U-Boote, p. 132.
crave political effects. The ever-present difficulty for the Germans whenever they attempted to carry out a restricted submarine campaign was that of determining the identity of a ship through a periscope.

Hermann Bauer understood the problem. He knew mistakes would be made and that not all his commanders possessed good judgment. This was one reason he suggested sinking all shipping—British and neutral—during a blockade of Britain. However much sinking every ship indiscriminately solved the problem of identifying its nationality, it certainly was politically unacceptable to the neutral nations of that time. The submarine blockade was more than a military matter. Because of necessity it affected those neutral states who traded with Britain, it was also a political affair. It was evident before the decision of 4 February was ever made that the success or failure of the blockade could depend solely upon the judgment of individual commanders. It was also evident that not all commanders were like Otto Herness.

Kapitänleutnant Walther Schwieger, U-20's commander, was only partly to blame. Schwieger was efficient, well liked by his fellow commanders and crew, eventually became a leading submarine ace before his death, and usually explicitly followed his orders closely, using little personal judgment. According to his orders his actions were correct. Poor weather compelled U-20 to spend 111 of the 137 hours she patrolled the area underwater. Conditions made it impossible to first warn
the ships and allow the crews to safely abandon ship. Schwieger also believed the ships he attacked carried troops and would have fired on him if he had surfaced. Generally these are weak excuses. In November Hersing sank the Malchite and Primo in the same area under similarly poor conditions and still followed cruiser warfare rules. In the Irish Sea he did the same. Much depended upon the commander's judgment. It is probable that even if conditions had been excellent Schwieger would have fired without warning. Later, in May 1915, Schwieger gained international notoriety when he sank the Lusitania. Again he acted within his orders but used little judgment. But Bauer and the High Seas Command must share the blame. In their eagerness to carry out their plans they acted without proper authority. They issued orders unwarranted by their command and especially opposed by higher authorities.

A British periodical, the Saturday Review, also noted the contrast in conduct between the two patrols. Nobody, the Saturday Review suggested would purposely attack a ship full of wounded. "Possibly the German defense is true, and the submarine [commander] clumsily mistook" his target. But this was unlikely.

305 From the war log of U-20. Spindler, Handelskrieg, I: 64. Schwieger identified the ships as British by the distress signal of one, the name of the other, and the flags illuminated by the stern light of the third. Gray, p. 67, mistakenly identified U-20's commander as Kapitänleutnant Dröschel.

306 Saturday Review 119 (6 February 1915), p. 130; see Hashagen, U-Boote Westwärts!, pp. xxii-xiv on the pressure of decision-making on the commander.
December and January were months of preparation in the German submarine fleet. As the boats came in for overhaul they were updated, armed, and equipped for a submarine blockade. Some commanders anticipated a spring blockade. When the war broke out only U-21 and U-25 were armed with deck guns, and despite the new speed in arming, not all boats had guns in February 1915. In addition, machine guns and charges were added to the submarines as were formal instructions for prize crews. Copies of Lloyd’s Register, which contained a complete listing of all the ships of the world, could not be obtained in sufficient quantity for all the boats to be supplied. By their actions it seemed that U-19, U-20, and U-21 were already prepared for the blockade by mid-January. Also, later, the German Navy placed merchant marine captains on the submarines to aid the commanders in identifying the ships.

In February 1915 Hermann Bauer commanded an expanded submarine organization. Four U-Halb-Flottille now existed. The First Halb-Flottille under the command of Kapitänleutnant Mühlaus was based on Heligoland. His flagship was T-109 and the old gas boats U-6, U-8 through U-10, and later, U-12, U-14, 307

Busch and Forstner, Unsere Marine im Weltkrieg, pp. 408-09; Spindler, Handelskrieg, T. 159; Thomas, p. 35; and Official German Documents, T. 553, states that many of the boats were not ready to conduct a commerce war in February 1915 and their "crews had not become entirely familiar with their boats." See also Bauer, Reichsleitung und U-Boots- einsatz, n. 23.
and U-16 and U-17. The Second Halb-Flottille under Korvetten-
Kapitän Arno Spindler in his flagship T-99, included the gas
boats U-12, U-14, U-16, and U-17, and two new diesels, U-34
and U-35. As the new diesel boats were readied they entered
Spindler's command and on 4 March the gas boats were trans-
ferred to the First Halb-Flottille. Kapitänleutnant Albert
Gayer aboard T-100 commanded the Third Halb-Flottille based
on the Ems River, Borkum Roads, and Emden. Six diesel boats,
U-19 through U-24, made up his command. Based in the same
area was the Fourth Halb-Flottille under Kapitänleutnant
Prause aboard T-101. He also had six diesel boats, U-27
through U-30, and U-32 and U-33.

During the first week of January U-71 through U-74 were
ordered from Vulkan. These boats were approximately the same
size as the other diesel boats. They only had one bow and one
stern torpedo tube and carried four 19.5 inch torpedoes in
addition to 34 UC-type mines. Their operational radius was
about equal to the high seas boats, however their top speeds
(10.6 knots on the surface and 7.98 knots submerged) were
slower than the high seas boats.

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Spindler, Handelskrieg, II: 9-10.
4. Blockade Plans of the Naval Staff and Pohl

On 20 January the Naval Staff reversed its former opinion of the submarine blockade. It now supported the action. A note sent the same day informed Admiral Pohl of the decision. The only question still to be settled by Bethmann Hollweg, the note stated, was that of deciding on the correct time to begin the blockade. Based on a 1908 British study, which the Naval Staff possessed, Britain's most vulnerable period was at the present time; food supplies existed for only six to eight weeks. Shipments of Argentine wheat were due to arrive shortly. If these could be kept away or limited Britain might be starved out in the near future. A blockade should begin as soon as possible, preferably on 1 February.

The Naval Staff that had let Bauer's plan collect dust for almost three weeks was suddenly engaged in serious study that resulted in the Naval Staff's own plan. This plan, drawn up and prepared by Fregattenkapitän Hendel, was sent to Bauer and the High Seas Command on 26 January. From the opening words it was obvious the Naval Staff disagreed with Bauer's plan:

(1) Bauer's stations were incorrectly situated. One submarine stationed between the Tyne and Farn Island would be ineffect-

310 Ibid., pp. 74-76. Admiral Tirpitz claimed that the Naval Staff was busily engaged in working out his proposal for a blockade of the Thames area when all work was halted by the decision for the blockade. Memoirs, II: 149.
ive in stopping traffic bound for the Thames. Once it was discovered that no submarine patrolled the Thames, southbound shipping would swing out into the North Sea to avoid the submarine's position. Two or three boats were needed to effectively blockade the Thames, but these were not available. The alternative was to mine the east coast harbors. Also, one submarine could effectively patrol the 50 miles between St. Alban's Head and Cap de la Hague. In addition, Bauer had overlooked the important port of Plymouth. Three boats were needed in the English Channel.

(2) Although two boats were needed to effectively patrol the Bristol Channel, it was narrow enough for one to patrol well.

(3) The Irish Sea was much too large an area for only one boat to effectively patrol. A boat should be stationed in St. George's Channel, the southern entrance to the Irish Sea. Bauer also overlooked the North Channel. One boat should be stationed there. Three boats were needed for the Irish Sea.

(4) Four submarines were not enough to blockade Britain.

(5) A blockade as proposed by Bauer and the High Seas Command would be "very ineffective." Ten boats were required for an effective blockade but because of the continuous need for repair seven boats would have to suffice.

In no way were Bauer and the High Seas Command reconciled to the Naval Staff's plan. Bauer desired more submarine stations but knew how few submarines were actually available.
"In reality, at the end of January it was practically not possible to have more than four boats ready for the commerce war." The Naval Staff's plan was hastily prepared and overlooked many of the problems of carrying out a blockade. Submarines were under repair longer than the Naval Staff realized, and the older gas boats were not suitable for use on the west coast of Britain, the main area of concern for the Naval Staff. Some boats were always lost on the way because of inefficiently trained crews or due to mechanical difficulties. Bauer realized that at times, according to his plan, there would be no submarines or, at most, one, near the west coast of Britain. It could not be helped. As February approached, agreement between Bauer and the Naval Staff was as distant as ever.

The operations orders that eventually were issued came not from Bauer nor the Naval Staff, but from Admiral Pohl. These stated:

(1) Submarine activities should begin in the English Channel and the west coast of Britain and Scotland. Argentine wheat shipments must be stopped.

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311 Ibid., p. 76. Gray, p. 77, mistakenly attributes the Naval Staff's plan for Bauer's while overlooking Bauer's plan. Bauer "claimed that only seven boats were needed on operation- al patrol at one time in order to achieve success."

312 Ibid., op. 74, 76-77. Even with Bauer's minimal figure of four boats it was difficult to continuously maintain the stations. In order to avoid a period when all the boats were under repair, gaps had to be allowed. The Naval Staff's figure and Pohl's necessitated longer periods when no boats would be on station.

313 Ibid., pp. 95-96.
(2) The Irish Sea, including the Bristol Channel, should have at least three boats while two or three operated in the English Channel.

(3) If trade shifts to other harbors to avoid the submarines the submarines must follow.

(4) The beginning of the blockade must be carried out with the strongest possible force. This will be of especially high value.

(5) The activities of the submarines were to begin on....

(6) Trade on the east coast of Britain, especially the Thames, must be restricted by mines.

Pohl's plan, calling for six submarines, was a slightly modified version of the Naval Staff's plan.

One can see that the blockade plans proposed by Pohl and the Naval Staff were not detailed studies, arising from a long period of deliberation of the facts. The plans were improvised in a very short time. Neither gave instructions on how to deal with neutral shipping, a major problem facing the submarine commanders, and neither seemed aware of the practical problems of a blockade.

5. Events until February and Public Opinion

Admiral Pohl wasted no time in using the Naval Staff's decision to his benefit. No longer could opponents of the submarine blockade point out that even his own staff disagreed with him over the issue. The same day he received the
Naval Staff's note Pohl sent a letter to Chancellor Bethmann Hollweg. In the letter he described the reasons behind the Naval Staff's decision to support the immediate start of the blockade; he added his own views, emphasizing the stoppage of Argentine wheat shipments. Once again he reminded the chancellor that the German people also demanded the blockade.

Before Bethmann Hollweg had an opportunity to reply to Pohl's letter, he met with Pohl, the War Minister and Chief of the General Staff, Erich von Falkenhayn, and Gottlieb von Jagow, the Secretary of State for Foreign Affairs. The meeting took place at General Headquarters on the morning of 27 January. Discussion centered around the submarine blockade. During this meeting Pohl almost immediately took issue with the chancellor and a long debate ensued about the effects of the blockade. It was at this time that Pohl presented the High Seas Command's proposal for the blockade of the coast of northern France. The Army, however, opposed it. Falkenhayn feared that shipments of food from the United States to Belgium would be endangered, thus compelling Germany to feed the Belgians, a burden Germany could not carry. Bethmann Hollweg agreed with Falkenhayn, upsetting Admiral Pohl, who called it "culpable, that our government had not worried about the restriction of grain consumption, and now the most

Ibid., pp. 82, 65-67.
harmful measures for England cannot be carried out for that reason...." In his anger Pohl blamed Tirpitz and the Reichsmarineamt for stirring up the people and the press for the submarine blockade.

Bethmann Hollweg was the main obstacle in the way of a favorable decision. That the chancellor appeared to be holding fast was apparent on 26 January when Pohl wrote of the "still existing considerations against the submarine blockade" that he had been unable to change. From discussions Tirpitz had with Wilhelm, Treutler, and Valentini, it seemed the chancellor's views still reigned supreme within the highest circles at General Headquarters. Argue as he might, Tirpitz could not convince them of the need for a submarine blockade.

But the chancellor was weakening. Although Tirpitz was completely out of touch with Pohl, Bethmann Hollweg sought his advice on the situation. The chancellor announced his readiness to pass over his doubts about the validity of the blockade "if he could receive assurances that this measure could be effectively carried out. This essentially would be a naval technical question." Despite assurances that the

315 Pohl, p. 104.
316 Tirpitz, Politische Dokumente, II: 195, Pohl to Ingenohl, 26 January 1915.
318 Tirpitz, Politische Dokumente, II: 300-01, conversation between Tirpitz and Bethmann Hollweg, 27 January 1915.
submarine would be successful, Tirpitz was reluctant to put himself on the spot and "could not...give an unqualified assurance as to the effectiveness of the submarine from a naval technical point of view, having regard to the novelty of the weapon." As before, Tirpitz urged that the blockade must be used, but agreed to its delay until the spring or summer of 1915 when plans were more complete, more submarines were available, and the Flanders base was readied.

As February approached, the chancellor began doubting his position on the blockade issue. He became more willing to accept the Navy's promises of success over and against his own views. Like Bölow in 1908 when he challenged Tirpitz's battlefleet program, Bethmann Hollweg realized he was only a civilian and knew little of naval technical matters. He was at a disadvantage vis-a-vis the Navy in discussions. The qualified expert, Pohl (like Tirpitz), was prepared to give those promises necessary to achieve his aims.

Public opinion eagerly took up the cry for a submarine blockade. Once this idea was revealed by the Wiegand interview, the press and public never stopped agitating for the one measure they believed could force Britain to her knees. Pohl frequently complained of public opinion and warned the chancellor that it could not be disregarded. During post-war hearings the role of public opinion in January was brought out. Its influence on Bethmann Hollweg must not be over-

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319 Tirpitz, Memoirs, II: 143, Politische Dokumente, II: 301.
320 Official German Documents, I: 346.
looked. The Wiegand interview

introduced the thought of the U-boat blockade to
the people, and how the imagination of the people
was fired to such an extent that they were no longer
able to dismiss the thought, until the broadest
circles of our population were in the grip of the
honest conviction that the U-boat war was the key
to our salvation and that he who opposed it was a
traitor to the people.

Because Bethmann Hollweg refused to sanction the submarine
blockade, he became the "traitor" in the eyes of many who did
not understand his position. He was accused of holding pro-
British sympathies and investments. Even Reichstag delegates
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pressured him. Observing the situation in mid-January,
Tirnitz felt the chancellor could not hold out much longer
against the increasing demands by the public for the sub-
marine blockade.

The German press strongly endorsed a submarine blockade.
Among the first to support it were the Frankfurter Zeitung
(22 December), the Leipziger Neuesten Nachrichten (23
December), and the Berliner Lokal Anzeiger (27 December).
Others followed in January. Among the most outspoken was the
Berliner Tageblatt, whose naval expert Kapitän zur See a. D.

321
Jarausch, Enigmatic Chancellor, p. 273; Ritter, Sword
and Sceptor, III: 125; Spindler, Handelskrieg, I: 80; Fritz
Fischer, Germany's Aims in the First World War (New York: W.W.
Norton & Co., 1967), pp. 281-82, fn p. 281; Marvin L. Edwards,
Stresemann and the Greater Germany, 1914-1918 (New York: Book-
man Assoc., Inc., 1963), pp. 81-83; and Klaus Epstein, Matthias
Erzberger and the Dilemma of German Democracy (New York:

322
Tirpitz, Politische Dokumente, II: 298-99, Tirpitz to
Crown Prince Wilhelm, 14 January 1914.
Lothar Persius, wrote an article entitled "Das Unterseeboot als Handelszerstörer."

In early February when word reached Germany of the sinking of six British merchant ships on 30 January, people were "jubilant" in belief that the submarine blockade had begun. Newspapers echoed this response, as did periodicals. As usual Persius and the Berliner Tageblatt shouted the loudest, threatening that there was more to come and predicting that all British trade would soon cease.

Letters in support of the blockade poured into various offices of the Navy and Foreign Office during January. There were not only simple pleas made by people who felt animosity towards Britain, but, rather, many detailed studies written by professors of economica at leading German universities and by businessmen. All emphasized Britain's dependence upon her overseas trade and vulnerability to a submarine blockade. Charts, statistics, and figures were supplied as proof. Probably the most influential study was that by a professor

326 Spindler, Handelskrieg, I: 225-42. Anlagen 20, 21, 22, 23, 24, and 25.
at Berlin's Handelshochschule, which dealt with Britain's food resources. Britain, it stated, depended upon Argentine wheat, which was harvested in December and shipped at the end of January. Shipments from elsewhere (India, Russia and Australia) were not coming this year, thus the Argentine wheat was vital for Britain's survival. At present, Britain had only six to eight weeks of food supplies remaining.

An important recent convert to the submarine blockade was Albert Ballin, the chairman of the Hamburg America Line. Fearful of its consequences for Germany, Ballin had earlier opposed the measure. He reasoned: "anything rather than provoke the enemy." It seemed that Ballin was influenced by the Argentine wheat report, in addition to British violations of international law. He revised his earlier thoughts about the ways available to Germany to attain her "desired goals." He wrote to Bethmann Hollweg and others that there were also alternative methods. Among these was "The most brutal application of a submarine blockade."

The pressure on Bethmann Hollweg mounted from all sides. Respected civilian figures as well as the Navy called for a

327 Ibid., p. 229, Anlage 20.
328 Tirpitz, Memoirs, II: 290.
submarine blockade. One man, the chancellor, stood between them and its start, and this man entered the month of February already doubting his own position and waiting for somebody to take the burden of decision from his shoulders by guaranteeing the blockade's success.

6. Decision for the Submarine Blockade

On 24 January a German cruiser squadron led by Vizeadmiral Franz von Hipper met a superior cruiser squadron under Admiral David Beatty in what became known as the Battle of the Dogger Bank. Although damaging two British cruisers, the Germans lost the cruiser Blücher while the Seydlitz was badly damaged. It was felt by some in the German Navy that the operation had been poorly planned by Admiral Ingenohl. Once again the subject of replacing Ingenohl was brought up. Admiral Möller studied the battle reports and concluded, much to his "chagrin," that Ingenohl must indeed be replaced by Pohl and a replacement found for Pohl.

Time was now running short for Pohl. His days as Chief of the Naval Staff were numbered; when he gave up that post he could no longer work for the establishment of the submarine blockade. Pohl probably knew at least a week in advance that he would replace Ingenohl. Fearing that once he

330 Görlitz, The Kaiser, pp. 60-61; Tirpitz, Politische Dokumente, II: 201-02, note by Hopmann, 27 January 1915; for reaction in the fleet see Horn, Stumpf Diary, pp. 63-64.
left the Naval Staff the blockade might never be enacted, he moved swiftly to see that it was. On 1 February at the Chancellory in Berlin the decisive meeting took place.

Present at the conference were Pohl, Bethmann Hollweg, Falkenhayn, Zimmermann, and Clemens von Delbrück, Secretary of State for the Interior. No official records exist of the conference and none of the participants, except Zimmermann, left an account of the conference. This added to the controversy surrounding the decision (or lack of decision) made there to start the submarine blockade. Writing to his wife soon after the conference, Pohl described how for days he had been completely preoccupied with blockade issue. "I thought only of the submarine blockade which I had to wring (abringen) from the chancellor." That is exactly what Pohl did—wring the decision from Bethmann Hollweg.

Although ready to drop his political objections, Bethmann Hollweg realized that Germany did not have many submarines with which to carry out the blockade. He wondered whether the Navy could adequately enforce the blockade. This

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had been his reason for seeking Tirpitz's advice. He now asked if Admiral Pohl, the "responsible expert," could guarantee the blockade's success. Seeing that the blockade was almost within his grasp, Pohl irresponsibly gave his assurance for the success of an operation that, once he left the Naval Staff in a few days, he would not be responsible for. No doubt existed in the Navy, he claimed, that the blockade could be vigorously carried out. Enough submarines were available to bring Britain to her knees "within a short time." After overestimating the ability of the submarines to enforce the blockade, he minimized the dangers faced by the neutrals. Submarine commanders, he assured Bethmann Hollweg, could distinguish between neutrals and belligerents; no difficulties would arise with the neutrals over mistaken identity. Pohl was confident of success.

General Falkenhayn dropped his former objections after being assured by Delbrück that in case of emergency Germany could feed the Belgians until the next harvest. Falkenhayn later wrote that Pohl assured him the "Navy now believed

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334 Soindler, Handelskrieg, I: 79, 84.

335 Ibid., 79, 83. In his memoirs Bethmann Hollweg also mentions the confidence within the Navy. Because of this feeling on the Navy's part he did not oppose the Navy's urgent demands too sharply. Bethmann Hollweg, Betrachtungen zum Weltkrieg, p. 117; and Bauer, Reichsleitung und U-Bootseinsatz, p. 24.

336 Görblitz, The Kaiser, pp. 62, 69. Afterwards Delbrück felt guilty for issuing such an assurance and he tried to win Möller's forgiveness. Möller, in exasperation, cried: "Where does the guilt lie?"
itself in a position to take up the war with submarines against England, with a prospect of overwhelming success."

Encouraged by statements like these and with all those at the conference apparently holding no objections to the blockade, Bethmann Hollweg gave his verbal approval to begin the blockade. The next morning, 2 February, he telephoned his agreement to Pohl and the Naval Staff. Soon orders were on their way.

The Foreign Office later claimed that Admiral Pohl had misunderstood the chancellor. No agreement was reached, the chancellor only agreed to consider the blockade. Pohl, however, denied this. He had explained the entire matter to the chancellor, who had agreed to it. What happened was that Bethmann Hollweg probably expressed some sort of general approval at the conference and repeated this the next morning over the phone. He may have thought that he had time before a final decision was made by the Emperor. However, he failed to calculate the speed and cunning of Admiral Pohl.


338 Tirpitz, Politische Dokumente, II: 303, undated note by the Deputy Chief of the Naval Staff, Behrcke; Spindler, Handelskrieg, I: 80. It was also decided at the conference to begin the blockade of the north and west coasts of France. A note warning the neutrals to avoid the area was published in the London Times (3 February 1915), p. 8; this operation did not require the approval of the Emperor. Germany officially informed the U.S. of this action on 6 February. Brown, Diplomatic Correspondence, p. 24, Bernstorff to Bryan, 6 February 1915.

339 Jarausch, pp. 273-74; Tirpitz, Mémoires, II: 147.
A suitable replacement for Admiral Pohl as Chief of the Naval Staff was not easily found. Müller passed over some who he felt would clash with Tirpitz, for he wanted to avoid a repetition of the relationship between Tirpitz and Pohl. Finally the choice narrowed to Admiral Gustav Bachmann, who had previously worked under Tirpitz at the Reichsmarineamt. On 2 February Müller informed Bachmann of his appointment. However, Bachmann was not enthusiastic about his new post; he regarded the position as an "absurdity." Nobody could direct the naval war from General Headquarters, situated so far inland and hampered by the need to have Wilhelm's decision on everything. Nevertheless, Bachmann reluctantly accepted the post. Immediately he telephoned Pohl to inform himself of the situation. After hearing Pohl's description of the blockade plans, Bachmann told him that he disagreed with them. The timing was too early. If it was up to him he would wait. Germany did not have enough submarines or any experience in waging a commerce war. Bachmann doubted whether the submarines could control such a large expanse of the ocean as included in the declaration. Pohl brushed aside these arguments as weak. Everything had been considered, he assured; the Foreign Office, Bethmann Hollweg, and the General Staff all agreed. The Emperor's agreement was imminent. But Bachmann disliked having to take responsibility for an operation he had not planned, later complaining that he had to "struggle so that we
can carry out [the blockade] and we are not disgraced before the entire world. It is the purest farce."

In the meantime the Naval Staff and Foreign Office worked up the final wording of the declaration that appeared in the Reichsanzeiger on 4 February. On 2 February the Naval Staff sent a note to Tirpitz that arrived the following day, after he had left for Wilhelmshaven for the change-of-command ceremony. Tirpitz, who knew nothing about the conference or its results, still did not have any information on 4 February.

All that remained for Admiral Pohl to do was secure the Emperor's signature to the declaration, the least difficult assignment. Pohl arrived in Wilhelmshaven on 3 February, where he met with his staff, which was still shocked by the sudden dismissal of Admiral Ingenohl. That night Pohl slept on board his flagship, Friedrich der Grosse, in expectation of the important morrow.

Since neither Tirpitz nor Müller was aware of the conference or its outcome, they were in no position to intercede against Pohl when he cornered Wilhelm and extracted his signature to the declaration. There were few witnesses to this


341 Tirpitz, Politische Dokumente, II: 303, 304, announcement in the Reichsanzeiger 2 February 1915 and Behncke to Tirpitz, 2 February 1915, also Memoirs, II: 143; Spindler, Handelskrieg, I: 91.

342 Pohl, pp. 105-06.
significant event. It took place on a barge en route to inspect the damaged Seydlitz. Tirpitz, who was closest to Wilhelm and Pohl, saw that something was happening but had no idea what it was about. Müller was "below in the cabin and could not hear the gist of Pohl's speech from the stern, otherwise I should have intervened very energetically in this browbeating of the Kaiser." Müller felt that Tirpitz, who was closer, should have intervened.

A contemporary author contends that the decision actually took place earlier. He bases his assumption on the fact that during Wilhelm's visit to the fleet he inspected the submarines, whose commanders were presented to him. Afterwards the commanders "were informed that the All-Highest had signed a proclamation" declaring the waters around Britain a war zone. This supposedly occurred before the barge trip to inspect the Seydlitz. However, according to Pohl, the inspection of the submarines occurred afterwards.

Pohl, who awoke early, met the Emperor at 9 AM on the dock. After a short ceremonial speech by Wilhelm all boarded the barge for the Seydlitz, and Wilhelm signed the declaration.

343 Tirpitz, Politische Dokumente, II: 304.
345 Gray, Killing Time, pp. 80-81.
346 Thomas, Raiders of the Deep, p. 38.
After this Wilhelm inspected the submarines, and, indeed, Hermann Bauer called his submarine commanders to the Hamburg to inform them of the decision. This is more convincing, for the other way implies the complicity of both Müller and Tirpitz, opponents for various reasons of beginning the submarine blockade in February 1915. If either desired Wilhelm's approval, they would certainly have supported Pohl in every possible way instead of idly standing by as they did.

During a late breakfast on the imperial train, Pohl explained the details and conditions of the blockade to Wilhelm. Tirpitz, who sat on the Emperor's right, was stunned to say very much. Since Wilhelm started the conversation, complaining about the weak armor of the Blücher and the inferiority of German ships, Tirpitz felt it prudent to remain silent. In any event, there was not much he could do to change the fait accompli.

What happened during the first four days of February 1915? Pohl, acting independently, left Müller and Tirpitz completely in the dark as to his plans and actions. If Pohl had kept them informed as earlier, either one could have blocked the decision. But Pohl remained steadfast in his decision not to work with Müller or Tirpitz. Both were later upset when they

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Pohl, p. 106; Busch and Forstner, Unsere Marine im Weltkriege, p. 409.

Pohl, p. 106.
realized what had happened. Tirpitz wrote that

I never learnt (sic) what reason there was for ignoring my view...but this constituted one more instance in which--and this in one of the most important questions with which my department was concerned--I was not consulted at all, the campaign being started over my head and against my will, and that in a form which did not promise success.

Tirpitz must have suspected why Pohl circumvented him since he and the Chief of Staff agreed on few matters. The fact that Pohl acted in such a manner should not have surprised him.

Müller, on the other hand, realized that Pohl had bypassed both him and Tirpitz but never suspected that Pohl had seen through his own plotting. Since this was the first and only instance he had been used, Müller, unlike Tirpitz, was not used to it and was more upset.

It was a disloyal act on Pohl's part not to have discussed the draft beforehand with the State Secretary. It was disloyal to me too, for he had previously invariably sought my advice in all important decisions. He was anxious at all costs to get the declaration published in his own name, and February 4th was certainly the very last day on which this was possible, for on that day he had taken over the command of the High Seas Fleet, and strictly speaking was no longer Chief of the Naval Staff.

Müller brought out another factor seemingly behind Pohl's action: vainglory. Müller felt Pohl was motivated by the desire to see the declaration published in his name, labeling this action "pirate bravado." Others agreed. This

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Tirpitz, Memoirs, II: 145; Raeder, Mein Leben, II: 101.


Hubatsch, Ara Tirpitz, p. 115; Spindler, Handelskrieg, I: 27; Tirpitz, Memoirs, II: 296; Bauer, Führer der U-Boote, p. 115.
was one operation in which Pohl sought to receive the sole credit. However, he received little reknown outside Germany. Because Tirpitz had publicized the submarine blockade idea in December, and because he appeared to many as the head of the German Navy, the blockade was viewed in the foreign press as his policy.

In one respect the Pohl-inspired blockade led to a certain degree of unanimity within the Navy. Some, like Tirpitz and Bauer, realized that an effective blockade could not be enforced in February. Others soon discovered it, among them Pohl. The charge made after the war that Tirpitz urged the opening of the submarine blockade in February 1915 with "strategic lightness" was incorrect. Admiral Pohl was the one who did so.

On 5 February 1915 the German declaration of the submarine blockade appeared in the New York Times:

The waters around Great Britain and Ireland, including the whole English Channel, are declared a war zone from and after Feb. 19, 1918.

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352 The New York Times (5 February 1915), p. 1, called the submarine blockade the "Von Tirpitz Policy."

353 Scheer, Germany's High Sea Fleet, pp. 226, 257. Scheer admitted that the blockade should not have begun until 1916; Official German Documents, I: 559-60; Tirpitz, Memoirs, II: 295-96; Pohl, pp. 107ff.

354 Persius, Tirpitz, der Totengräber, p. 11.

Every merchant ship found in this war zone will be destroyed, even if it is impossible to avert dangers which threaten the crew and passengers.

Also, neutral ships in the war zone, as in consequences of the misuse of neutral flags, ordered by the British government on Jan. 31, and in view of the hazards of naval warfare, it cannot always be avoided that attacks meant for enemy ships endanger neutral ships.

Shipping northward, around the Shetland Islands in the eastern basin of the North Sea and in a strip of at least thirty nautical miles in breadth along the Dutch coast, is endangered in the same way.

Germany thus implied in its blockade declaration that it would not always be possible for submarines to give a warning before attacking. Neutral ships were warned that it was difficult to distinguish between them and belligerents. The Germans thought the misuse of neutral flags justified this action, for on 30 January the Admiralty had ordered all British ships to fly neutral colors, especially that of the U.S., when approaching British waters. Indeed, on 30 January the Lusitania raised the U.S. flag when it neared the Irish coast. However, the initial response among shipping lines in America was one of unconcern. Most lines disregarded the German declaration and determined to continue sailings to the British Isles, calling the blockade a "bluff."

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356 Bailey and Ryan, Lusitania Disaster, p. 48. One German newspaper, the Kreuzzeitung, threatened that because of the misuse of neutral flags "German submarines will have to direct their torpedoes at neutral ships." New York Times (2 February 1915), p. 2.

Admiral Pohl's orders arrived at the Führer der U-Boote's headquarters on 2 February, but Bauer did not even accept these as an operational guideline. Once again Bauer acted independently. Regardless of the number of submarines Pohl's plan called for, Bauer knew what was available. On 8 February the High Seas Command informed the Naval Staff that the first submarine would be dispatched to the English Channel the following day; on 11 February another boat would be sent to the west coast of Britain; on the 13 February one boat would be sent to the channel as relief; and on 16 February one boat would be sent to the east coast of Britain. This made a total of three blockade stations at the beginning, one less than even Bauer wanted. Actually when the deadline expired on 18 February there were only two boats at sea, U-16 in the English Channel, and U-30 in the Irish Sea. To his chagrin Admiral Pohl, now Commander-in-Chief of the High Seas Fleet, had to accept the situation. No more boats were available.

Bauer's orders, not Pohl's, were issued to the submarine commanders. Bauer's orders were more detailed than either the Naval Staff's or Pohl's, and were similar to his December plan. These orders stated:

(1) There are three blockade stations: (a) west coast of Britain; (b) the English Channel; and (c) the British east coast between the Firth of Forth and the Tyne. For use at

358
Spindler, Handelskrieg, I: 96, 130, and II: 19-20;
Scheer, p. 257.
359
Spindler, Handelskrieg, II: 13.
station (a) were the diesel boats U-19 and up, alternating between the Irish Sea and the Bristol Channel. For use at station (b) were the gas boats, operating near the Isle of Wight and along the British coast to the Straits of Dover. The new diesel submarines, which had yet to complete their trials, would operate at station (c).

(2) These stations were only to be used as guides for the commanders. Much would depend upon the weather, observation of the trade lanes, and enemy countermeasures. The foundation of the operation was to inflict the greatest possible damage to enemy trade.

(3) Submarines were to use the greatest caution in passing through the English Channel. Mines, torpedo boats, and enemy submarines made the area dangerous.

(4) Submarines were forbidden to use the base at Zeebrugge due to the danger from planes, which often spotted the submarines and reported their probable course for interception.

(5) After leaving their stations submarines were to return with as many torpedoes as the commander felt necessary for the boat's own protection and for possible attacks on enemy warships. Two torpedoes should be the minimum, one in the bow tube and one in the stern tube. Small vessels should be sunk by explosive charges or gunfire. This action, however, 360

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360 U-14 was damaged by a bomb dropped from a British plane on 2 February.
should be done with extreme caution. Explosions were liable to attract enemy destroyers or large armed steamers, and while on the surface the submarine was vulnerable to enemy submarine attacks.

(6) The object of the attack was ships going and coming from Britain with the preference given to large steamers inward bound.

When the submarine blockade was formally announced on 4 February 1915, Germany had thirty-three submarines. However, this figure is misleading. U-1 through U-4 were used primarily for training. Five more submarines, U-36 through U-39, and U-41, were completing training. U-32 and U-14 soon began long periods of repair; U-33 and U-34 were only available for limited use; and U-23 had just arrived from the Baltic Sea and was not yet equipped for blockade duty when the orders arrived. Bauer calculated that after an eighteen day patrol for the diesel boats, of which time only four days were spent on station, the other fourteen being spent in coming and going from the station, an average of twenty-eight days was needed to overhaul each boat. It was a total of forty-six days from the beginning of one war patrol to that of the next. With ten diesel boats available Bauer calculated that one would have to leave for the British coast every four days. The gas boats, Bauer figured, would have a sixteen day patrol, of which again only four days were spent on station. They also would need a twenty-eight day overhaul period. With only seven gas boats
available one would have to leave for the channel every six day.

It was not until 1916 that Germany had enough submarines to really effectively wage a commerce war on British trade. From August 1914 to February 1915 new construction barely kept pace with losses. This situation remained unchanged throughout the first phase of the submarine commerce war which ended in October 1915.

Hermann Bauer accurately perceived that only a handful of submarines would be available in February for the blockade, and that these could not effectively stop all British trade. Pohl and the Naval Staff, on the other hand, mistakenly assumed more submarines were available than was actually the case. Indeed, the Naval Staff believed that only ten submarines could effectively blockade Britain. Possibly

Spindler, Handelskrieg, II: 19-20; and Admiral Eduard von Capelle's explanation on calculating the number of available submarines in Official German Documents, I: 505.

Albert Gayer, who commanded a U-Flottille in February 1915, suggested that Conan Doyle's article on submarines contributed to the Naval Staff's over-estimation of the submarine's ability. The Naval Staff was aware of the article and "since the problem appeared so easy to Sir Conan Doyle, it possibly explains why such remarkable optimism existed" within the German Navy. "Summary of German Submarine Operations," USNIP 52, p. 625; Capelle, who replaced Tirpitz as State Secretary in 1916, testified that "there was published in England before the war a pamphlet which described U-boat warfare in an absolutely masterly manner and which attracted a great deal of attention. This was a pamphlet written by Conan Doyle. According to this pamphlet, a successful U-boat war was carried on against England, by eight boats." Official German Documents, I: 594.
bly due to the fact that an in depth study had not preceded their formulation, neither of the plans showed an awareness of the actual conditions. Because of the earlier successes of the submarines (against old, slow, pre-dreadnoughts taking little or no precautions) Pohl and the Naval Staff had a tendency to over-estimate the submarine's ability to enforce the blockade.

In addition, neither Pohl nor the Naval Staff included instructions on how to deal with the neutrals, leaving it up to Bauer to formulate guidelines for his submarine commanders. On 11 February Bauer issued supplemental orders to those of 8 February in an attempt to aid his commanders. Neutrals wanted to place markings on the sides of their ships to help the submarine commanders distinguish between them and British ships. Bauer's new orders asked that attacks should be directed in the first degree towards British ships. Ships flying neutral colors but with no neutral markings were to be assumed British. However, Bauer told his commanders that even neutral markings were not a guarantee of neutrality; the British might soon copy this procedure. Thus the problem of identifying neutrals still had not been solved. Indeed, Bachmann issued orders to the submarine commanders on 12 February that encouraged, even more, indiscriminate sinkings. Commanders were urged to attempt to ascertain the nationality of ships they were attacking. Mistakes, however, were still possible.
But commanders who made mistakes would be supported by the Naval Staff.

Germany embarked upon this new method of naval warfare ill-prepared and uncertain of the consequences. The official historian of the German submarine war characterized the situation best when he noted that "what the commanders would do with the new orders and how their actions would effect events remained to be seen."

Others, less directly, shared the responsibility for starting the submarine blockade at such a disadvantageous time. Although he opposed the start of the blockade in February 1915, Admiral Tirpitz, perhaps more than any one else except Admiral Pohl, affected its adoption. His non-cooperation and rivalry with Pohl at General Headquarters led directly to Pohl's acting independently of Tirpitz and, later, Müller, and made it virtually impossible for them to prohibit Pohl from obtaining the decision for the submarine blockade. The Wiegand interview in December 1914 rallied the public behind the submarine blockade and placed additional pressure upon Chancellor Bethmann Hollweg's shoulders. The chancellor, unfortunately, was not a strong individual. He

abandoned his objections to the blockade and, worse, his convictions that politically the blockade would be a disaster, bringing more harm than good to Germany. Faced with pressure from the Navy, as well as public, Bethmann Hollweg weakened and gave in to Pohl's assurances of success. None of Germany's leaders, political or military, who were involved with the submarine blockade issue, shine very well. Court politicking, deception, jealousy, irresponsibility, and misinformation were evident among them. Thus, it is not surprising that Germany embarked upon and potentially politically dangerous method of warfare ill-prepared.

Evident in the development of the German submarine and its ensuing doctrine is the lack of lack of leadership, disunity, and inner power struggles between the various departments and their chiefs. The German Navy, which gave the appearance of strong leadership under the Supreme War Lord, the Emperor, actually lacked central guidance. Wilhelm II, who desired to be the sole decision-maker in the Navy, was unable to fulfill that role. Still, in the years 1897-1914, when Admiral Tirpitz was building the High Seas Fleet, the Navy gave the appearance of having strong leadership. This was only because Wilhelm desired the fleet's build up and supported Tirpitz, giving the impression that Tirpitz controlled the Navy. Only to a perceptive viewer was it apparent that the Navy's unity under Tirpitz was superficial.
The development of the submarine reflects the lack of unity within the Navy. Both Tirpitz and the Naval Staff fought for control of the submarine's development. Tirpitz, trying to adapt the submarine into his naval strategy, sought to develop its offensive potential. The line officers and Naval Staff, on the other hand, saw the submarine as an in-shore coast defense weapon, a scout for the High Seas Fleet, and a blockade breaker. Tirpitz and the Reichsmarineamt controlled naval construction and submarines were under their jurisdiction. But the Naval Staff, which was responsible for developing operations plans, and the line officers disagreed with Tirpitz's naval strategy. Thus the problem was unresolved and before the war the submarine's role was still undefined.

No commonly accepted submarine doctrine existed before the war as is evident by a glimpse of submarine activities during the first few months of the war: harbor defense, scouting, special assignments, searches for the Grand Fleet. Not until Hermann Bauer became Führer der U-Boote in August 1914 was a definite submarine doctrine gradually formed. It did not take Bauer long to grasp that the success of submarines against warships was minimal and that the submarine was best suited for the role of a commerce raider. The commerce raiding idea had been given only slight thought in the German Navy before the war, possibly because the submarine was generally a new weapon—untested—and because its development was clouded by the struggle between Tirpitz and the
line officers and Naval Staff. Only in the spring of 1914 was a study of the submarine's role in war made as a guide for future construction. The study recommended the submarine for commerce raiding, although at the time the Navy rejected this idea as too radical.

Six months passed before Bauer's idea was accepted at General Headquarters. The events leading up to this decision once again point out the weakness of the German Navy's organization. Tirpitz, who appeared to be the Navy's head in peace time, had no authority in the conduct of the war. The Chief of the Naval Staff, Pohl, had responsibility for this matter. However, a third party, Chief of the Naval Cabinet, Müller, was a force to be reckoned with. Together at General Headquarters all three participated in court politics, intrigues, and schemes; jealously of each other's position made cooperation virtually impossible. Leadership and decision-making were governed by these factors. Wilhelm, the supposed head of the Navy, was unable to fulfill this function in the least during the war. The chancellor, Bethmann Hollweg, who should have taken control, was also a weak individual and was compromised by the ascendant position given the military leaders over the civilian in Germany. He was able to resist Navy demands for a submarine blockade for awhile but eventually gave way under public pressure and assurances of its success. However, the lack of cooperation among the naval leaders had resulted in the failure to thoroughly develop
and plan the submarine blockade. Therefore Germany inaugurated this new method of naval warfare at an importune time and without the means to effectively carry it out. The result was a disaster for Germany diplomatically and eventually militarily.
Proposed submarine blockade stations of Blum's May 1914 study.
Submarine stations proposed by Bauer in his December 1914 plan.
War and safe passage zones as declared in the German Navy's 4 February 1915 declaration.
APPENDICES

I. Submarine and Torpedo Boat Allotments for the German Navy, 1905-1913.

<table>
<thead>
<tr>
<th>Year</th>
<th>Submarines</th>
<th>Torpedo Boats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>1.5 million marks</td>
<td>7.201 million marks</td>
</tr>
<tr>
<td>1906</td>
<td>2.5 &quot;</td>
<td>12.885 &quot;</td>
</tr>
<tr>
<td>1907</td>
<td>3.0 &quot;</td>
<td>16.98 &quot;</td>
</tr>
<tr>
<td>1908</td>
<td>7.0 &quot;</td>
<td>21.22 &quot;</td>
</tr>
<tr>
<td>1909</td>
<td>10.0 &quot;</td>
<td>22.68 &quot;</td>
</tr>
<tr>
<td>1910</td>
<td>15.0 &quot;</td>
<td>21.78 &quot;</td>
</tr>
<tr>
<td>1911</td>
<td>15.0 &quot;</td>
<td>21.78 &quot;</td>
</tr>
<tr>
<td>1912</td>
<td>20.0 &quot;</td>
<td>18.58 &quot;</td>
</tr>
<tr>
<td>1913</td>
<td>20.0 &quot;</td>
<td>23.45 &quot;</td>
</tr>
<tr>
<td></td>
<td>74.0 million marks</td>
<td>166.356 million marks</td>
</tr>
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II. Comparative Submarine Budgets of Leading Navies, 1906-1913.

<table>
<thead>
<tr>
<th>Country</th>
<th>Amount</th>
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<tbody>
<tr>
<td>France</td>
<td>93.2 million marks</td>
</tr>
<tr>
<td>Germany</td>
<td>72.5 &quot;</td>
</tr>
<tr>
<td>USA</td>
<td>67.7 &quot;</td>
</tr>
<tr>
<td>Britain</td>
<td>54.1 &quot;</td>
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III. Yearly German Submarine Construction, 1905-1914.

<table>
<thead>
<tr>
<th>Year</th>
<th>Ordered</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1906</td>
<td>1</td>
<td>1</td>
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<tr>
<td>1907</td>
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<td>0</td>
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<td>1908</td>
<td>8</td>
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<tr>
<td>1909</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1910</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>1911</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1912</td>
<td>14*</td>
<td>5</td>
</tr>
<tr>
<td>1913</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>1914</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>43</td>
<td>29</td>
</tr>
</tbody>
</table>

*one boat was ordered at Fiat in Italy*
IV. German Submarine Losses, August 1914-February 1915.

<table>
<thead>
<tr>
<th>Submarine</th>
<th>Date Lost</th>
</tr>
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<tbody>
<tr>
<td>U-13</td>
<td>8 Aug. 1914</td>
</tr>
<tr>
<td>U-15</td>
<td>9 Aug. 1914</td>
</tr>
<tr>
<td>U-18</td>
<td>23 Nov. 1914</td>
</tr>
<tr>
<td>U-11</td>
<td>9 Dec. 1914</td>
</tr>
<tr>
<td>U-5</td>
<td>18 Dec. 1914</td>
</tr>
<tr>
<td>U-31</td>
<td>13 Jan. 1915</td>
</tr>
<tr>
<td>U-7</td>
<td>21 Jan. 1915</td>
</tr>
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V. Comparative German Naval Officer Ranks.

<table>
<thead>
<tr>
<th>Imperial German Navy</th>
<th>US Navy</th>
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</thead>
<tbody>
<tr>
<td>Leutnant zur See</td>
<td>Ensign</td>
</tr>
<tr>
<td>Oberleutnant zur See</td>
<td>Lieutenant (j.g.)</td>
</tr>
<tr>
<td>Kapitänleutnant</td>
<td>Lieutenant</td>
</tr>
<tr>
<td>Korvettenkapitän</td>
<td>Lt. Commander</td>
</tr>
<tr>
<td>Fregattenkapitän</td>
<td>Commander</td>
</tr>
<tr>
<td>Kapitän zur See</td>
<td>Captain</td>
</tr>
<tr>
<td>Konteradmiral</td>
<td>Rear-Admiral</td>
</tr>
<tr>
<td>Vizeadmiral</td>
<td>Vice-Admiral</td>
</tr>
<tr>
<td>Admiral</td>
<td>Admiral</td>
</tr>
<tr>
<td>Grossadmiral</td>
<td>Fleet Admiral</td>
</tr>
</tbody>
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