

**THE DEVELOPMENT OF THE GERMAN
SURFACE FLEET 1919 - 1939**

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THE DEVELOPMENT OF THE GERMAN SURFACE FLEET

1919 - 1939

An Abstract

Presented to

the Graduate Council of
Austin Peay State University

In Partial Fulfillment
of the Requirements for the Degree

Master of Arts

by

Martin Daniel Livingston

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ABSTRACT

I propose to trace the history of the development of the German surface fleet from 1919-39. This is the period of time in which the old German High Seas Fleet of World War I passes from the scene in accordance with provisions contained in the Armistice and peace treaties. The period ends with a redeveloped German surface fleet that is once more a power on the world scene. This is despite the incomplete condition of the German building programs.

I will include the changing theories of sea warfare in relation to the surface fleet. This will begin with the coastal defense concept forced upon Germany by the naval limitations provisions of the Treaty of Versailles. The account will end with the balanced fleet concept of the Third Reich.

A section of the paper will be devoted to the German building programs that were designed to give force to the theories. This portion of the paper will include plans that were proposed, but not carried out. This failure to build the vessels can be traced to such things as the coming of the war and changes in naval theory.

The final item will be an assessment of the strength of the German Navy at the beginning of World War

II. This section will include a discussion of the organization of the fleet.

I wish to do this paper as I have never seen a work that covers the German Navy during this period in any great detail. There is a great deal of material available in the documents translated for the Nuremburg Trials, and testimony given at Nuremburg. There is further material available from the United States Naval Institute, the Naval War College, and National Archives.

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To the Graduate Council:

I am submitting herewith a Thesis written by Martin Daniel Livingston entitled "The Development of the German Surface Fleet, 1919-1939." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in History.

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INTRODUCTION

The purpose of this paper is to trace the development of the German surface fleet in the years between the First and Second World Wars. Germany had to develop an entirely new surface fleet after World War I, which ended with her being stripped of modern naval armaments. It shall be necessary to deal not only with the new ships built, but also with the organization, command structure, and training of the new fleet as all these elements are vital to the development of naval power. How the terms of the Treaty of Versailles were dealt with and eventually negated will also have to be an integral part of this investigation.

This investigation will hopefully fill a large gap I have noticed in many accounts of the German Navy in the Second World War. Hopefully it will deal effectively with the question of how Germany once again became a naval power after its loss of the First World War, as the gap left in many accounts does not give a picture of the great effort expended in the rebuilding of the surface fleet. The few accounts dealing with the German Navy cover this period only very lightly, preferring to concentrate on the Second World War. I have attempted to give a very close account of how the German fleet developed its power between the wars.

Chapter I

DEATH AND BIRTH

The birth of the "new" German surface fleet began with the death of the "old" Imperial High Seas Fleet. The combined death and birth occurred on June 21, 1919.¹ This date was to see the scuttling of the core of the Imperial High Seas Fleet, which was interned at Scapa Flow awaiting the outcome of the World War I peace talks in Paris.²

This last operation of the Imperial High Seas Fleet was carried out when it seemed the peace talks were going to break down. The ships were scuttled to prevent the major portion of the fleet from falling into Allied hands should fighting recommence.³ Admiral von Reuter (commander of the interned fleet) had received the suggestion for the scuttling operation from Admiral von Trotha, the commander of the German Navy.⁴ Junior Captain Quaet-Faslem, commander of the dispatch boat that kept the interned fleet in contact with Germany, had carried the suggestion to von Reuter.⁵

Scuttling operations began at 10:00 A.M. on June 21, 1919. The signal for the scuttling operation to begin was the raising of the battleflag on the flagship Frederich Der Grosse.⁶ Officers and crewmen quickly set about the task of sinking their ships by opening the sea cocks and insuring that watertight integrity could not be restored.

Elements in the crews that might have resisted this effort had been sent back to Germany. The reduction in crewmen was the result of two events. The first was a suggestion by von Reuter that the numbers on board ship be reduced to ease supply difficulties. The second was a British decision to reduce the number on board ships to improve security, which played right into the hands of the German desire to eliminate unreliable elements.⁷

The Scapa Flow events were seen as saving the honor of the German Navy from the disgrace of defeat and the fleet mutiny at the end of the war. Honor restored by the scuttling of the fleet would serve as a partial basis for the building of a new fleet to once again represent the power of Germany on the oceans of the world.⁸ This view can best be seen in the welcoming speech Admiral von Trotha gave to Admiral von Reuter on his return to Germany following a short term of imprisonment in Great Britain.⁹ Admiral von Trotha said:

I have been deeply moved to bid you the warmest welcome on behalf of the German Navy and our dear Fatherland.

You stand before me as the last here of our German High Seas Fleet which once was so accustomed to victory. The ships you have not brought home. You at your lonely post gave the order to sink the fleet when you regarded the resumption of the war as a fact.¹⁰

The psychological interpretation of the scuttling as a "victory" for Germany is well illustrated by this speech. It would serve as a moral basis and justification for

building a new fleet. A failure to destroy the fleet would have made it difficult to push for a new fleet as it would have been difficult to convince anyone of the need for a strong fleet when its predecessor had a history of ending in dishonor.

The warships interned at Scapa Flow had been the newest units in the German Navy. Their destruction increased the pressure for the confiscation of the remainder of the German fleet.¹¹ Destruction of the interned ships and the wish to eliminate the threat of German naval might from the world forever resulted in the naval provisions of the Treaty of Versailles. These provisions were contained in Article 181 through 197 of the treaty.¹²

Versailles Treaty provisions made the German Navy a force only capable of limited coastal defense operations. All modern units, and any effective offensive power was eliminated. The equipment the Allies allowed to remain in German hands was merely a collection of older warships of little value. Pre-dreadnought battleships of the Deutschland and Lothringen types were to form the core of the fleet by serving as its main battle force.¹³ These pre-dreadnought battleships had lost most of their fighting value with the launching by the British of H. M. S. Dreadnought in 1906.¹⁴

Manpower limitations of the size of the navy to 15,000 of which only 1,500 could be officers or warrant officers, and length of service controls requiring twelve

years for enlisted men and 25 years for officers were designated to keep the navy a small force. The prohibition of an organized reserve was designed to prevent a buildup of organized manpower that could be used to quickly expand the size of the navy in times of emergency. It was felt that these provisions would thwart any future attempt of a swift buildup in German naval might by limiting the amount of trained manpower available for use.¹⁵

Versailles set the terms for replacement of the ships contained in the navy to insure that the power of future German warships would be controlled. Age regulations for replacement of battleships at 20 years, and destroyers and torpedo boats at 15 years insured that except for short periods the German Navy would always be equipped with obsolete or obsolescent ships of low fighting abilities. Tonnage regulations limiting armored ships to 10,000 tons, cruisers to 6,000 tons, destroyers to 800 tons, and torpedo boats to 200 tons were designed to keep German ships smaller than corresponding classes in other navies, and thus weaker in combat effectiveness.¹⁶ It was believed that the tonnage restrictions would prevent the development of a sea-going, battle-worthy navy, and result in a fleet restricted to coast defense duties.

The number of ships was limited to the number provided for in the treaty provisions, and replacement was on a one-for-one basis. Treaty allowances were 6 armored

ships, 6 cruisers, 12 destroyers, and 12 torpedo boats.¹⁷

Provisions contained in the Treaty evidently failed to take into account the great amount of ingenuity the Germans would apply to circumventing the efforts to insure a weak navy that would never threaten anybody. The effort made in the treaty to destroy any future possibility of Germany possessing significant naval power proved to be an utter failure. Ample illustration of this failure may be seen in the position Germany was to hold among the world's seapowers by September 1, 1939. The Germans would once again possess a powerful, high quality navy able to challenge her enemies for the control of the seas.

Chapter II

INTERLUDE AND THE MONSTER STIRS

Despite the luck of modern equipment, and inactivity of a temporary nature imposed on the German Navy the period after World War I was not an idle one. After the disposal of what remained of the Imperial High Seas Fleet by handing the specified units and equipment over to the Allied nations the navy applied itself to tasks it considered more important, the building of foundations for a new and powerful fleet in the future.¹⁸

The key to future development was felt to be in the area of manpower. Manpower reductions forced by the treaty allowed the naval command to call through the men under its control and choose to retain only those of the greatest ability and developmental promise. It also allowed the elimination from the navy rolls any officers and men that were considered unreliable or who might cause difficulties in the building of the new fleet.¹⁹

Manpower reductions brought a certain reordering into personnel systems, training, and organization. The training and promotional systems were reworked to introduce greater fairness, and eliminate, as much as possible, promotion on the basis of political connections, family relations, and other non-military considerations.

Increased weight was to be given to merit and professional skills in the promotion of officers and enlisted men. Engineering officers were brought into a position of greater equality with deck officers, and were to be assigned positions of greater responsibility. The engineering officers now could rise as high as the rank of rear admiral in the command structure of the German Navy.²⁰

The dependence on volunteers to fill the necessary positions made certain other realignments necessary in the system. The training program for enlisted men was expanded to include not only the skills necessary for the navy, but also civilian technical training so that a man could become a useful member of civilian society after completion of his term of service. Many men entered upon the completion of their naval duty.²¹

The new system apparently worked very well as the navy always had more volunteers than it needed, and could pick only those of the highest quality. This ensured that the German Navy was composed of manpower equal in skill and technical proficiency to those in any other navy in the world.²²

Officer training must be brought forward as well as the training of the enlisted men. In this period there was no clearly defined systematic approach to officer training, although certain general outlines were followed. There were two schools established for the technical training of

officers. Flensburg-Mürwick was to provide the training for the line officers, and Kiel-Wik was the training center for engineering officers.²³ All line officers went through periods of training on the Berlin and the sailing ship Niobe. The Berlin was also used as the training ship for the future engineering officers.²⁴ The training of all officers was to be based on three principles established by Erich Raeder (later commander of the navy). The principles he established were:

1. Only firm but friendly discipline could be expected to achieve a high standard of efficiency.
2. The prerequisite for such a state of discipline is a well disciplined corps of officers and petty officers.
3. A modest but definite feeling of pride and self-respect commensurate with the officer's rank must be instilled in the officer corps if it is to fulfill its duty. ²⁵

Training of the commanders in the higher realms of strategy and naval thinking was greatly hindered by the provisions of the Versailles treaty. Treaty provisions required the abolition of the Naval War College. This was replaced by a series of lectures that eventually became an eighteen month course for assistants to commanding officers.²⁶

The efforts to avoid the prohibitions of the treaty had begun even in the early 1920's. Many technicians who could not be retained under the strength limitations were retained as civilian employees.²⁷ A department was also maintained to keep abreast of aircraft developments abroad,

and serve as a secret embryo for a future naval air service.²⁸

The command structure was not a very complex one at the time. The commander of the navy was under the minister of defense. Three officers were directly responsible to the navy commander. These officers were the commander of the fleet, the commander of the North Sea area, and the commander of the Baltic Sea area.²⁹ This structure was entrusted with control of naval operations, naval bases, and coastal defense.

War plans prepared by the naval staff looked to Poland, Russia, or a combination of France and Poland as possible enemies. There was felt to be no necessity to prepare plans for a war against Great Britain as any such war would be hopeless. The core of the war plans were to control the Baltic and its exits to prevent aid from reaching Poland and to depend on strong coastal defenses to hold the North Sea coast. This type of action was felt to be well within the capabilities of the German fleet due to the small area involved and limited access to the Baltic by way of the Skaggerak and Kattegat.³⁰

Ship construction was not to be totally neglected. The first replacement cruiser was to be laid down in 1921. The cruiser would be launched on January 7, 1925.³¹ It had taken four years to build due to production delays arising from the French occupation of the Ruhr. The name of the new cruiser was the Emden, in memory of the World War I

raider. It was launched by Lieutenant von Mencke, second in command of the old Emden, and Mrs. von Mueller, widow of the commander of the old Emden. The Commander-in-Chief of the Navy, Admiral Zenker, was there, and reminded the spectators of the significance of the name in his speech.³²

This was the first stirring of the new German surface fleet. The monster was beginning to awake and take form that would come to turn its power on the world once again in the not too distant future.

Chapter III

THE MUSCLES BEGIN TO DEVELOP

The cruiser Emden, launched in 1925, though built within treaty limitations, should have served as a warning of things to come.³³

It was not the weak, short ranged, and powerless ship that the Allies had envisioned the treaty provisions creating. It was rather an extremely powerful modern warship the equal of any vessel of the same class in the world. A powerful armament of eight 5.9 inch, and three 3.5 inch guns, plus four 19.7 inch torpedo tubes were carried.³⁴ The Emden also showed that the German Navy had no intention of restricting itself to coastal operations as the ship was given a wider radius of action, and great attention was paid to habitability requirements for long cruises.³⁵

New torpedo boats were to appear on the scene in 1926 to add more modern units to the fleet (and replace old, valueless units). The Möwe, launched on March 4, 1926, would be followed by her sister ships Albatross, Greif, and Seeadler on July 15, 1926, and the class was finished by the launch of Falke and Kondor on September 22, 1926.³⁶ These were exceptionally fine, light escort vessels of 800 tons displacement. They were well armed with three 4.1 inch, 50 caliber dual purpose cannon, two 1 pounder anti-aircraft

guns, and six 21 inch torpedo tubes. They had a very high top speed of 33 knots. These ships were from the 1924 and 1925 building programs.³⁷

Political opposition to naval building programs up until this time seems to have been of little consequence, but in January, 1926 serious opposition began to appear. The democrats and the centrists joined the socialists in opposing an increase of 25% to 203,000,000 marks present in the 1926 naval budget request. A 47,000,000 mark increase over 1925 was attacked as excessively large. No need was seen for such additional costs when naval power was limited by treaty.³⁸ Attacks by the opposition on the naval budget were to prove a failure. The Nationalist forces were able to celebrate appropriations for two new cruisers and three new destroyers being made in 1926.³⁹

Königsberg and Karlsruhe were the two cruisers of the 1926 program, joined by a third, later the Köln, would appear in 1927. These cruisers were the most powerful in the world for their displacement of 6,000 tons. They carried nine 5.9 inch cannon, six 3.5 inch anti-aircraft guns, and eight 3 pounder anti-aircraft guns. In addition twelve 21 inch torpedo tubes in four triple mountings were carried. The top speed was 32 knots and extreme cruising range was 10,000 miles at 10 knots.⁴⁰ The range and power show that the design took into account the possibility of operations in the Atlantic, as such capabilities would not

be required for the small area of the Baltic.

Two escort vessels of the 1926 program would be launched on October 12, 1927. These were the Iltis and Wolf; they were classed as torpedo boats rather than destroyers. Armament was three 4.1 inch guns, two 1 pounder anti-aircraft guns, and six 21 inch torpedo tubes. Their top speed was approximately 33 knots.⁴¹

Investigation into replacement battleships was to begin in 1927 at the behest of Admiral Zenker. Three proposals were pushed forward to be considered as the specifications for the armored ship replacements of the pre-dreadnought battleships that were the main battle force of the German Navy. Specification A called for a main armament of 12 inch guns with approximately eight inches of armor in the main belt. This specification called for a top speed of 21 knots. Specification B was to have an armament of 12 inch guns, an armored belt of approximately eleven inches, and a top speed of 18 knots. Specification C provided 11 inch main armament, a four inch armored belt, and a 26 knot top speed. The early discussions views changed to Specification C as the most effective answer to German naval needs. It was ultimately decided that the requirements would be six 11 inch guns, eight 5.9 inch guns, four inches of armored belt, and a speed of 26 knots. The firepower and protection was to be superior to any other 10,000 ton cruiser, and the speed would be great enough to run away from any larger

ships.⁴² These specifications would eventually take concrete form in the pocket battleships. This ship's design once again reflects the desire of the navy to be capable of operating in the Atlantic Ocean rather than restricting itself to coastal defense duties.

Socialist party policy was once again to call for attacks on the navy expenditures. An anti-naval budget was proposed that allowed no expansion of naval facilities or units, but rather was designed to maintain the status quo. Their view is best expressed in the statement that "The only result of the navy's existence is the squandering of big and constantly growing sums of money."⁴³ Attacks on naval expenditure were largely without any great effect on the naval scene, as planning for new ships continued and generally saw fruition. General approval was gained for building what would eventually become the first of the pocket battleships, but was decided by the government that plans for the ship would have to be approved again in 1928.⁴⁴

In September, 1927, President von Hindenberg reviewed the fleet. He expressed his pride in the fleet, and said he saw it as the basis of a great fleet of the future. This was certainly true as it was designed for expansion.⁴⁵ The review included the battleships Schleswig-Holstein, Elsass, Hessen, and Schlesien, the cruisers Nymphe, Berlin, and Amazone, plus supporting destroyers and

torpedo boats.⁴⁶ Following the review fleet maneuvers were held that illustrated the battle readiness of the German fleet.⁴⁷ The visit by Hindenberg greatly helped the prestige of the navy, and gave added support to those pushing naval appropriations in the Reichstag.

1928 was to be a year filled with events for the German Navy. The cruiser Köln would be launched on May 23, 1928, to join her sister ships Königsberg and Karlsruhe.⁴⁸

She, like her two sisters, had an unusual turret arrangement of the superimposed triple 5.9 inch turret on the stern being offset due to the magazine arrangement.⁴⁹ Torpedo boats (light destroyers) Jaguar, Leopard, Luchs, and Tiger were all launched in March, 1928. These torpedo boats were sister ships to the Iltis and Wolf launched in 1927. Leopard and Luchs differed from the rest of the class in mounting three 5 inch 50 caliber guns instead of the 4.1 inch guns mounted in the other ships.⁵⁰

Naval commanders would be changed in 1928. Admiral Zenker announced in February that he would be resigning his post before the year ended. The resignation announcement had a two fold basis. The first reason for the resignation was involvement in the Phoebus scandal. Secret funds that were beyond parliamentary supervision had been diverted to Phoebus films, and used for purposes other than the naval developmental for which the funds were intended. His

resignation was forced because the scandal had occurred while he was directly responsible for the activities of the navy, and thus this instance of misappropriation of funds.⁵¹ A second reason the resignation became necessary was a personality clash with defense minister Groener. Groener blamed the navy for the loss of World War I, and felt that unnecessary resources were being devoted to rebuilding the navy. Despite Groener's feeling that the navy was consuming too many resources he still supported the construction of another cruiser. Construction was justified by the isolated position of East Prussia, which was separated from the rest of Germany by the Polish corridor.⁵² In case of war the only sure communications between the province of East Prussia and the rest of Germany would be by sea, which necessitated the maintenance of some effective naval forces.

Socialists would again attack the naval budget as unnecessarily large. They saw the issue as a choice between "a pocket battleship - or food for children." A major leader in the fight for the naval budget, and against socialist efforts to cut the budget would be Grand Admiral Tirpitz, who had become a nationalist deputy in the Reichstag.⁵³

The fight over the naval budget would end in approval for the funds to build the pocket battleship. By a strange paradox, however, it was a socialist government

that would give final approval. Chancellor Mueller, a socialist, explained the cabinet's approval by saying that approval had to be given as the funds were available and the law had already been passed.⁵⁴ Thus the first pocket battleship was to be funded and construction would begin. All this occurred against a background of a steadily worsening economic situation and rising unemployment.

Admiral Zenker resigned in September, 1928, after being the commander of the navy for four years.⁵⁵ Admiral Erich Raeder was chosen to succeed Admiral Zenker as the commander of the navy. His view of the navy was expressed in the new year's message he sent to the navy on January 1, 1929, which said: "We will do our duty in the new year, united in aim and firm in the belief in Germany's future."⁵⁶

Chapter IV

DEVELOPMENT SPEEDS UP

Admiral Raeder's assumption to the command of the German Navy was to coincide with an acceleration in the development of the German surface fleet. Germany was once again rated among the world's top seven naval powers by the British.⁵⁷

Keel-laying ceremonies for the first pocket battleship were conducted on January 12, 1929.⁵⁸ This ship was a totally new type of warship on the world scene, and would eventually create a furor in the naval world. Electrical welding would totally replace riveting as a means of construction for the first time. This would result in great weight savings that would allow more tonnage to be devoted to the offensive weapons of the new warship. Light alloys were employed wherever possible to further increase weight savings. Internal subdivision was very thorough to make the ship very difficult to destroy, and to help make up for the relatively thin armored belt.⁵⁹

The socialists and communists once again tried to block further appropriations for the new ship. These efforts again met with total failure. Socialist Chancellor Muller even voted in favor of funds to continue construction.⁶⁰

A new cruiser named the Leipzig would be launched on October 18, 1929. It was a very powerful ship of 6,000 tons. Armament was one 5.9 inch cannon, six 3.5 inch cannon, and eight 3 pounder anti-aircraft guns. Torpedo armament was twelve 21 inch torpedo tubes. She was essentially an improved Königsberg class cruiser that had been enlarged to improve sea-keeping qualities. A top speed of 32 knots was attainable. A diesel engine was carried to provide power for cruising purposes in place of the steam turbines, and thus increased operational range. The steam turbines were retained for use in operational conditions.⁶¹

1930 was to be a year filled with events revolving around the navy. A major world naval event was the London Naval Conference. Germany became disgruntled over not being invited considering her growing naval might (as far as public opinion was concerned).⁶² The official position of the German government to cover its disgruntlement was that no reason for participation existed as Germany was disarmed, and had no desire to involve herself with other powers.⁶³ Germany became angered by constant references to her building program being made by participants in the conference. Staunch declarations were issued stating that the naval clauses of the Versailles Treaty were being observed.⁶⁴ Another statement was issued saying that Germany's new pocket battleship was designed to be powerful within the treaty limitations.⁶⁵

Politically, 1930 would bring changes that favored

the further development of the navy. The year had begun badly with the disapproval of funds for a second pocket battleship by cabinet decision on February 13.⁶⁶ Nine million marks were approved to continue construction of the first pocket battleship, however, and 100,000 marks approved towards a possible cruiser.⁶⁷ Economic and diplomatic conditions were the key elements in bringing about the disapproval of funds for the second pocket battleship.⁶⁸ Then a change in government occurred replacing the Müller government with one headed by Brüning. Immediately the new government disavowed the Müller disapproval of the new pocket battleship and put it into the budget for 1931. The appropriation for the new pocket battleship was approved despite opposition.⁶⁹ Justification was found for building the new ship in the position of East Prussia, and would be a useful pawn at the forthcoming Geneva Disarmament Conference.⁷⁰

May 19, 1931, was to see the launching of the first pocket battleship. She was named Deutschland. President Hindenberg, Chancellor Brüning and other important persons would attend.⁷¹ The Deutschland did not wait to be christened, when Chancellor Brüning mentioned the League of Nations in his speech the Deutschland began to slide down the ways, and launched herself (this was no doubt due to a miscalculation on the part of the launching crew).⁷²

Chancellor Brüning said:

Today Germany is showing the world that she can find the strength to insure peace and defend her honor in spite of the stern limitations placed upon us and in spite of the gravest economic depression.

Unspeakable suffering and misfortune have laid upon the Fatherland for almost half a generation now, but they have not sufficed to change the character of our people from its fundamentally peace loving but proud and sensitive nature.

Loyally have we fulfilled the treaty requirements and devotedly have we sought to do what we would despite the scanty means of an impoverished nation.

I do not believe that any true friend of peace can be offended when we celebrate this launching blessed as it is by the presence of our beloved President.

While our Foreign Minister as Chairman of the Council serves the cause of peace and understanding at Geneva our hope is that others will follow the example we set in disarming.⁷³

The Deutschland had a shattering impact on the world scene. It represented a new concept of light ship with a heavy armament and long range that would be ideally suited for commerce raiding. Armed with six 11 inch, eight 5.9 inch, six 4.1 inch guns, and eight 21 inch torpedo tubes, she easily had an armament heavier than anything of a similar size in the world. Her top speed of 26 knots⁷⁴ meant that she could easily outrun anything more heavily armed except for the British battlecruisers Hood, Repulse, and Renown.⁷⁵ The 11 inch guns were a new model that could fire a 670 pound shell 30,000 yards at an elevation of 60° degrees. She was the first ship of such size to depend on diesel engines for propulsion.⁷⁶

Tactical horizons of the German Navy were greatly expanded by the addition of the pocket battleship.

Operational planning replaced the idea of the solid fleet with that of the task force. A task force would be organized specifically for the mission it was assigned, and broken up on the completion of its assigned mission. These ideas were given impetus by the modern equipment suited to such operations then becoming available to the German Navy.⁷⁷

President Hindenberg reviewed the fleet again on May 20, 1931. It took less than half an hour. He reviewed four battleships, all pre-dreadnoughts as the Deutschland was not yet operational, three 6,000 ton cruisers, nineteen destroyers and one training ship.⁷⁸

Adolph Hitler's name first appears in reference to the navy in May, 1932. The democrats complained through their newspaper the Tageblatt that the navy rendered Hitler special honors when he visited the cruiser Köln. Special honors being the requiring of fresh uniforms and a demonstration torpedo firing. The navy replied that it carried out similar honors for any visiting member of the Reichstag. Final comment by the paper was: "We aren't in the Third Reich yet."⁷⁹

A disaster was to strike the German Navy on July 26, 1932. The three-masted cadet sailing barque, Niobe, capsized in a sudden squall in the Baltic.⁸⁰ This tragedy cost the live of two-thirds of an entire year's class of officer cadets (it killed 69).⁸¹ Captain Ruhfus, the Niobe commander, and his first Lieutenant survived.⁸² They were

exonerated by a court martial of any fault in the tragedy, and it was attributed to a freak of the weather that no one could be prepared for.⁸³ Even this tragedy did not slow the continuing development of a surface fleet of ever increasing power.

The pace of naval construction continued. Keel-laying ceremonies were performed for a third pocket battleship at Wilhelmshaven.⁸⁴ This added further fire to the burgeoning naval expansion that was soon to break upon the world.

Another change in conditions that would drastically alter the condition of the navy, Germany, and the world, occurred on January 30, 1933. Adolph Hitler would assume the position of chancellor of the German Reich.⁸⁵

Chapter V

THE YEARS OF RESTRAINT

1933 - 1935

Hitler's attainment of power on January 30, 1933, implied that a vigorous program of naval expansion would take place. This new program was a necessity if Germany was ever again to be a great power, as Hitler desired. Military power was necessary to attain the great heights he thought that Germany should hold as superior to all other countries and peoples. It was not possible to begin immediate expansion as the political conditions at home and abroad had to be prepared to accept German rearmament. Germany would have to be brought firmly under his personal control, and all opposition would have to be eliminated as a first step in his program. Abroad it would be necessary to conduct a diplomatic and propaganda campaign to gain acceptance of rearmament. An important step would have to be an agreement with one of the World War I victors that would negate several provisions of the Versailles Treaty. This would prevent either Britain or France from applying power that could easily have destroyed Germany if she had simply ignored the Versailles Treaty. Once a signatory had agreed to the negotiation of terms, and an agreement was in the process of being reached it would be

easy to claim that the treaty was a dead letter. The treaty being a dead letter could be ignored allowing rearmament to proceed.⁸⁶

Admiral Raeder was to meet Adolf Hitler for the first time at the home of General Baron von Hammerstein, Chief of the Army High Command. A birthday party was being held there for foreign minister von Neurath.⁸⁷ Admiral Raeder seems to have been greatly impressed by Hitler, and Hitler seems to have been greatly impressed by Raeder. Hitler would depend on Raeder as his chief adviser on naval affairs for many years (until violent disagreements would force Raeder to resign in 1943).⁸⁸ The Führer was was afraid of the sea, and did not understand sea power; therefore, he generally showed an unusual deference for Raeder's expert opinions and analysis.⁸⁹

April 1, 1933, was to be a great day for the development of the German surface fleet. The pocket battleship Deutschland would be commissioned, and the pocket battleship Admiral Scheer would be launched.⁹⁰ Deutschland's command would be entrusted to Captain Herman von Fischel, who had been a famous U-Boat commander in the First World War.

May, 1933, was to be another auspicious month for the German Navy. May 4, 1933, would see the Gorth Fork launched. It was a new three masted cadet training ship to replace the Niobe. Partial payment for the new ship

had been made from funds raised by the German Women's Naval League. Gorth Fork was a German poet who had been killed at the battle of Skaggerak (better known under the British name of Jutland) during the First World War.⁹²

May would also see the navy hold the first of many naval maneuvers that Adolf Hitler would attend. Two days were to be devoted to naval war games. Hitler seems to have been greatly impressed and following a review at the conclusion of the maneuvers said: "With pride and joy I have attended the two-day maneuvers of the fleet. I thank the navy and wish for its growing strength and successful further work."⁹³

Hitler's control of Germany would first make itself felt in a concrete fashion within the navy in 1934. February 19, 1934, the swastika was added to the German eagle on the uniform of every man in the navy.⁹⁴ The swastika was within a circle of oak leaves clutched in the talons of the German eagle. This act symbolized the full power that Hitler was swiftly establishing for himself in Germany. A second demonstration was an order that all Jews be eliminated from the ranks of the navy.⁹⁵ This order was circumvented as much as possible by the naval authorities.⁹⁶

Several new ships would join the German Navy in 1934. Graf Spee, the last of the pocket battleships, was launched on June 29, 1934. Its christening was performed by von Spee's daughter.⁹⁷ A light cruiser, the Nuremburg,

was launched, December 8, 1934. Her armament was nine 5.9 inch, eight 3.5 inch, and eight 3 pounder cannons, plus twelve 21 inch torpedo tubes. A top speed of 32 knots could be reached.⁹⁸ This ship was a further improvement of the same basic design as the Königsberg class, with increased range, better sea-keeping qualities, and slight increase in armament.

Diplomatic moves to eliminate the restrictions imposed by Versailles were successful, and the situation being favorable, Hitler renounced the Versailles Treaty on March 16, 1935.⁹⁹ Hitler had ordered feelers extended to Great Britain on beginning negotiations on a naval treaty, and Britain had accepted these feelers with joy. Ribbentrop headed the negotiating team with technical advice to be provided by Rear Admiral Guse.¹⁰⁰ There was disagreement when the conference opened in March as to whether political or military aspects should be negotiated first. The German view that political aspects should be negotiated first was to win out.¹⁰¹ Political aspects covered such subjects as conditions for the treaty to come into force, and how the agreement would be enforced. Military aspects dealt with specific details of the agreement as it affected the make-up of the German fleet. German demands were for an allowance of 35 per cent of the tonnage of the British fleet, which was the largest and most powerful in the world at the time. All demands were

subject to negotiation except the demand for 35 per cent of the British tonnage.¹⁰² Agreement was finally reached and the Anglo-German Naval Agreement was signed June 18, 1935.¹⁰³

The provisions contained in the agreement were very favorable to Germany. It would allow Germany to build one of the world's most powerful fleets. Germany was allowed to build 35 per cent of the tonnage possessed by Great Britain. The only limitation contained within the treaty was that the 35 per cent figure apply within categories of warships, and not just total tonnage. Category tonnage limitations would prevent Germany from gaining superiority over Britain in key warship types, thus preventing Germany from gaining actual naval superiority over Britain. Building programs for the new ships were required to be spread out to prevent Germany from having a newer, and more effective fleet, which would give a better advantage in combat than the British. The other naval powers had to agree to accept the terms allowed Germany.¹⁰⁴ This agreement was obtained rather easily, except from the United States, which refused comment. A way was found to amend the Versailles Treaty. This was an interesting provision, since Germany had already renounced the treaty and it was a dead letter. Germany was given under the agreement 184,000 tons for battleships, 51,000 tons for heavy cruisers, 67,000 tons for aircraft

carriers, and 52,000 tons for destroyers. Tonnage allowances were based on standard displacement figures.¹⁰⁵

Chapter VI

THE PUSH FORWARD

1935 - 1936

German naval expansion had continued in 1935, several new units adding further to the growing power of the German fleet. The first destroyers of the Lebrecht Maas class had been launched. These were Lebrecht Maas, Georg Thiele, Max Schultz, Richard Beitzen, and Frederich Ihn. They had a particularly powerful armament for a 1,625 ton displacement. They carried five 5 inch and four 37mm cannon. The torpedo armament consisted of eight 21 inch torpedo tubes in two quadruple mounts. A very high speed of 36 knots could be attained under full power.¹⁰⁶

Graf Spee, the last of the pocket battleships, was placed in full commission January 3, 1936. Special guests at the commissioning were the survivors of Admiral von Spee's Far Eastern Squadron that had been destroyed at the battle of the Falkland Islands in World War I.¹⁰⁷ Raeder telegraphed a message to be read at the commissioning ceremonies which said:

With the name of Graf Spee are indissolubly connected in the history of the great war the splendor of the Coronel and the glory of the heroic Falkland battle.

A remarkable leader who was closely connected with his men through loyal care for them, a truly knightly officer, Spee will always stand before us as a radiant example to imitate who[m] shall be our highest aim. ¹⁰⁸

No time had been wasted on beginning the program made possible by the Anglo-German Naval Agreement. A new construction program was announced. New construction plans called for two 26,000 ton battleships, three heavy cruisers of 10,000 tons, and sixteen destroyers. The two battleships would use materials originally stock-piled for building the fourth and fifth pocket battleships.¹⁰⁹

Three important developments would greatly aid the increase in size and power of the navy. Compulsory military service's reintroduction would assure a ready source of manpower to provide crews for the new ships and shore installations of the navy. The Anglo-German Naval Agreement insured that naval expansion could continue without any threat to foreign intervention. A new battle flag, the Reichskriegsfahne, was created giving the military the psychological uplift of an identifying mark to distinguish it from the rest of the nation, and other organizations.¹¹⁰

Hitler illustrated his high regard for the navy, and its growing power and importance by promoting Raeder to the rank of Admiral-General. This promotion was announced on April 20, 1936, Hitler's forty-seventh birthday.¹¹¹

A significant number of new ships would join the navy in 1936. The most important would be the Scharnhorst, launched October 3, 1936, and the Gneisenau, launched December 8, 1936.¹¹² These battleships were a great

addition to the combat power of the German Navy. A powerful armament of nine 11 inch, twelve 5.9, and twelve 4.1 inch guns was carried on a displacement of 26,000 tons. Top speed was 30 knots.¹¹³ Design elements included provisions for the replacement of the nine 11 inch guns with six 15 inch guns. The larger guns were not mounted as it would have delayed the fast production of the new units, and they were to be mounted as soon as production space allowed, without diversions being made from armament being produced for other ships.¹¹⁴

A new class of cruisers would be started with the launch of the Admiral Hipper, the first ship of an extremely powerful class of 10,000 ton cruisers. Ship's armament was to be eight 8 inch and twelve 4.1 inch guns. A maximum speed of 33 knots was attainable.¹¹⁵ These ships were the first to be built under the Anglo-German Naval Agreement. Further ships were added to the Lebrecht Maas class of destroyers. The new additions were: Paul Jacobi, Theodor Reidel, Herman Schoemann, Bruno Heineman, Wolfgang Zenker, Hans Lody, Bernd von Arnim, Eric Geise, and Erich Steinbrinck.¹¹⁶

Further development of the fleet was not to be neglected in 1936. Two new battleships of an extremely powerful type were laid down. Eventually the two new battleships would become the much feared Bismarck and Tirpitz. They were designed to be more powerful than any

ships afloat or planned that would operate in European waters.¹¹⁷

A new class of ship in the experience of the German Navy would also be laid down in 1936. This new type was the aircraft carrier.¹¹⁸ It was designed for a displacement of 19,250 tons, and to carry over forty aircraft. An aircraft carrier would have added greatly to the power of the German Navy, but clashes with Herman Goering over who would control naval aviation ended with the navy losing control. Thus, necessary aircraft types were never developed, and the specialized training necessary for naval air crews was never carried out. As a result no aircraft carrier was ever commissioned in the German Navy.¹¹⁹

German government spokesmen constantly emphasized that all the new construction was well within the limits set by the Anglo-German Naval Agreement.¹²⁰ Time and military preparedness were not yet in such a state as to allow antagonizing the world powers by ignoring agreements on military strength. The surrounding nations were still much more powerful than Germany, and could easily have crushed her without much trouble.¹²¹

Added prestige would fall to the German Navy, as a part of the increased prestige of Germany as a whole that arose from holding the 1936 Olympics, centered on Berlin, in Germany. The navy was entrusted with preparing for and running the yacht competition that was one of the major events of the Olympic games.¹²² The yacht races went off

very well, and the efficiency with which they were run by the German Navy. This is very important as pride is a vital element in the maintenance of an effective military force. It would symbolize the acceptance of the German Navy by the other nations of the world, and the regaining of prestige lost in World War I.¹²³

Chapter VII

THE FANGS ARE SHOWN

1936 - 1937

Germany was to have her first opportunity to try out her new fleet under combat conditions with the coming of the Spanish Civil War. Technically, Germany was a participant in the non-intervention agreement, and as such participated in the non-intervention naval patrols that were supposed to keep supplies from reaching either side in the conflict.¹²⁴ Such agreements, however, did not prevent the German Navy from interfering on the side of the Nationalists and against the Republicans wherever possible. This was combined with land aid in the form of German "volunteers" formed into what is known as the Condor Legion. They also did not prevent supply ships from reaching nationalist ports, particularly Italian and German vessels.¹²⁵ This seems to contrast rather badly with the truly impartial application of the blockade by other navies.¹²⁶

The pocket battleship Deutschland appears to be the first German ship to have interfered in the Spanish Civil War. She was to prevent an attempt by Republican forces to bombard nationalist positions at Ceuta by her very presence. This was the first time a pocket battleship would make its presence felt in any war zone.

German government sources made it plain that they supported the nationalists. Spain's civil war was interpreted as part of the great fight against bolshevism. It was also seen as a way to break the French-Soviet encirclement of Germany by supporting a friendly government behind France.¹²⁸

Germany's substantial naval involvement in the Spanish Civil War did not begin until it agreed to be part of the non-intervention board for Spain. Agreement to join the non-intervention board was made March 13, 1937.¹²⁹ Immediately the German Navy purchased nine 1,000 ton vessels to be armed with 3 inch cannon. The small vessels were to serve as inshore patrols so that the non-intervention blockade could be enforced.¹³⁰ Naval patrols of the different participants were to be co-ordinated through the Non-Intervention Board, which was relatively ineffective in doing more than controlling general operations.¹³¹

Events soon provided Germany with the chance to give her ships real combat experience. May 29, 1937 saw the pocket battleship Deutschland anchored off the Balearic island of Ibiza under the command of Admiral von Fischel, when a number of Republican planes appeared overhead and proceeded to bomb the ship. This action, coming on top of the bombing of the torpedo boat Albatross off Palma a few days before, would provide the excuse for retaliation.¹³² Retaliation was not slow in coming on May 31, 1937, the

Deutschland and supporting ships appeared off the republican port of Almeria, which was defenseless. They then proceeded to bombard the port, killing 30 people and knocking out power and gas installations.¹³³ The date is significant because it was the first hostile action to be carried out since the end of the First World War by ships of the German Navy, and was the anniversary of the battle of Skaggerak.¹³⁴ It was played up in Germany as a reason for pride as the bombing had been avenged.¹³⁵ Captain Funger, who commanded the Deutschland when it was bombed, was replaced by Captain Wenneker for failing to open fire on the planes before the bombs were dropped.¹³⁶

German diplomatic reaction to the bombing of the Deutschland was swift in coming. Germany withdrew from the Non-Intervention Board, and demanded assurance of safety for her ships.¹³⁷ Britain quickly proposed that well-publicized safety zones be created, and that consultations should be undertaken before retaliation was carried out.¹³⁸

The new agreement barely lasted long enough to be publicized. June 23, 1937, was to bring a number of events that would end the agreement. Graf Spee was ordered to proceed to Spain, where she was to protect German interests in Valencia "against Bolshevik firebrands."¹³⁹ Withdrawal from the International Non-Intervention Agreement was announced. This withdrawal was over the attempt of a

Republican submarine to torpedo the cruiser Lepzieg on two occasions, June 15 and June 18.¹⁴⁰ After withdrawal from the agreement, Germany continued to maintain eighteen warships and a number of converted trawlers in Spanish waters. German naval forces, which were to provide a constant source of worry, particularly after a declaration was issued supporting Franco.¹⁴¹

German naval activity was not concentrated on Spain in 1937. A second heavy cruiser of the Admiral Hipper class, the Blücher was launched June 8, 1937. It was named in honor of the armored cruiser sunk at the battle of Dogger Bank on January 24, 1915. The christening was performed by the widow of Captain Erdmann, who had gone down with the Blücher.¹⁴² A series of thirty-six minesweepers was started in 1937, and the last one was to be launched in 1940. Each minesweeper displaced 600 tons, and was armed with two 4.1 inch and two 37 mm cannon. They were unusual in depending on coal for fuel, and having a slow speed of 17 knots.¹⁴³

Chapter VIII

THE STORM GATHERS

1938

The year 1938 was to be an eventful year for the German Navy, and was to see the first warnings given that another war was planned in the near future. Adolf Hitler informed Admiral Raeder that preparations for war with England and France were to be pushed, and construction of the Bismarck and Tirpitz was to be speeded up. Also preparations were to be made for the construction of six more large battleships.¹⁴⁴

In September, 1938, planning began for a construction program that would allow Germany to threaten Britain's supremacy on the high seas. Two plans were offered that tied fleet development to expected political developments. There was a short term plan that would be used if war was expected in the near future. This plan called for the construction of submarines and medium battleships, which would be most useful in destroying British commerce, and could be completed swiftly. The second plan was for a balanced fleet that would be capable of meeting the British fleet in open battle. A long period of peace was necessary to allow completion of this plan.¹⁴⁵ Hitler chose the second plan, and restated his assurance that would would not come before 1945 or 1946.¹⁴⁶

Z-Plan was the result of Hitler's decision for the development of a balanced fleet. Planning called for the fleet to consist of ten large battleships, three battle cruisers, three pocket battleships, four aircraft carriers, five 10,000 ton cruisers, six 6,000 ton cruisers, twenty-two 5,000 ton scout cruisers, sixty-eight destroyers, ninety torpedo boats, twenty-seven large ocean U-Boats, sixty-two U-Boats.¹⁴⁷ This plan was never even to approach completion. The war came too soon.

Germany's operational planning was closely attuned to the construction called for under Z-Plan. Its plan probably represented the only effective way to wrest control of the sea away from Britain and force her to surrender under the existing conditions. It called for a series of sea zones with specific types of forces to operate in each zone. Coastal waters were to be covered by U-Boats, aircraft, and destroyers. Operations in the next zone were to be entrusted to pocket battleships and cruisers operating singly or in small groups with the aid of U-Boat cruisers and auxiliary cruisers. This zonal system would force the British to form convoys with strong naval escorts, thus setting British forces up for the roving German task forces of three large battleships, and one aircraft carrier. The strong German task forces would then hopefully be able to destroy the convoys. An added element to make sure that the British could not devote very strong forces to

convoy escort duties was to be the maintaining of a strong fleet in Germany to threaten the British in the North Sea. This German fleet would consist of the older battleships Scharnhorst, Gneisenau, Bismarck, and Tirpitz.¹⁴⁸ This plan shows that Germany realized Britain's dependence on overseas commerce for her livelihood and war-making powers. Britain would be incapable of carrying on war if her vast imports of food, raw materials, and war supplies were cut off. A stoppage of commerce for any prolonged period of time would force her to ask for peace terms, and eliminate Germany's most dangerous European rival.

August, 1938, was to see the biggest naval wargames held by the German fleet since the Imperial High Seas Fleet had passed from the scene. The wargames were held in the North Sea off Denmark with a theoretical action against the British forming the basis for the games.¹⁴⁹ A special guest at the wargames was Admiral Horthy, Regent of Hungary, and formerly an Admiral in the Imperial and Royal Austro-Hungarian Navy.¹⁵⁰

Admiral Horthy did more than just view naval wargames on his visit to Germany. August 22, 1938, was to see Admiral Horthy christen the new heavy cruiser Prinz Eugen, a ship of the Admiral Hipper class, named for Austro-Hungarian, World War I battleship.¹⁵¹

A new destroyer would join those already on the fleet list in 1938. Karl Galster was an improved fleet destroyer type displacing 1,811 tons. She carried an

armament of five 5 inch, four 37 millimeter, and four 20 millimeter cannon. She also mounted eight 21 inch torpedo tubes.¹⁵² This ship is rather unusual in being launched the year before any other ships of the same class. The five vessels that made up the rest of the class would be launched in 1939.¹⁵³

Chapter IX

THE WAR ARRIVES

1939

The last months of peace were to see a great flurry of activity on the part of the German Navy. Activity increased as the world situation steadily worsened, and the war drew steadily closer.

Naval expansion was to increase in speed in 1939. Another heavy cruiser of the Admiral Hipper class, the Seydlitz, was launched January 19, 1939.¹⁵⁴ It was named for the World War I battlecruiser damaged at Skaggerak. February 14, 1939, was to see the launching of the Bismarck at Hamburg. Countess Dorothea von Lowenfeld, granddaughter of Bismarck, performed the christening. Adolf Hitler branded Bismarck's treatment at the hands of Kaiser Wilhelm II "a disgraceful chapter" in his launching speech.¹⁵⁵ April 1, 1939 would see the Tirpitz, a sister ship of the Bismarck, launched. Frau Ulrich von Hassell, daughter of Admiral Tirpitz, performed the christening. Adolf Hitler used the occasion to promote Raeder to Grand Admiral, and warn England of the worsening situation.¹⁵⁶ These two new battleships were the most powerful in European waters with an armament of eight 15 inch, twelve 5.9 inch, and sixteen 4.1 inch guns.¹⁵⁷ Both Bismarck and Tirpitz were so

heavily compartmented by watertight subdividing as to be believed unsinkable.¹⁵⁸

April 18, through May 13, 1939, would see the German Navy conduct maneuvers.¹⁵⁹ These maneuvers would demonstrate its long range sea-going battle power to the world, as they were held off Spain in the Atlantic rather than in the North Sea and Baltic.¹⁶⁰ The last peace-time maneuvers for the German Navy were held in mid-June off the coast of Denmark.¹⁶¹ April would also see German naval units support the peaceful takeover of Memmelland in Lithuania on April 18.¹⁶²

Other vital preparations for the war would not be neglected. The Kiel canal was being widened and modernized to allow its use by Germany's newest battleships.¹⁶³ This canal was a great strategic tool as it allowed the swift transfer of ships between the Baltic and North Sea, and also this transfer could be made in relative safety from attack. Russian naval expansion plans were used as an excuse for the work on the Kiel Canal.¹⁶⁴

Diplomatic conditions worsened in relation to the navy. Hitler renounced the Anglo-German Naval Agreement on April 28, 1939.¹⁶⁵ The navy was no longer to consider itself limited in size by any diplomatic agreements.

Complete mobilization was not carried out on August 26 when the rest of the armed forces mobilized. Grand Admiral Raeder was still hoping for a diplomatic settlement, as the navy was not ready for war. The war's

coming when it did rather surprised Raeder, as Hitler had assured him that no war would occur until 1942 or 1943 at the earliest.¹⁶⁶

Naval action began with the establishment of a blockade around the Polish port of Gdynia.¹⁶⁷ The first shots fired by the navy would be from the old battleship, Schleswig-Holstein, at the Polish coastal defenses around Gdynia.¹⁶⁸

Germany was totally outclassed in the naval theatre by the forces ranged against her. This was due to the decision to follow the long term Z-Plan rather than a shorter term plan that would have been effective for a war in 1939.

Chapter X

THE NAVAL POSITION

1939

German naval preparedness for the war that broke upon the world on September 1, 1939, was decidedly lacking. Decisions made by the highest level of government (i.e. Adolf Hitler) had tied the navy to a long-term construction program, which was years from completion. Its war plans were not fitted for the tools at hand as they had been made with a much larger and more powerful fleet in mind. It was thus forced to fight a much superior Allied fleet with improvised war plans, and little chance of wresting the vital control of the seas from the enemy nations. The weakness of the German Navy would play a key role in the German loss of World War II.¹⁶⁹

Germany ranked sixth among the world naval powers at the opening of World War II. She ranked behind Great Britain, United States, Japan, France, and Italy in tonnage.¹⁷⁰ Great Britain and France easily outweighed the puny might of the German Navy. Italy, Germany's only ally with naval power in Europe, was easily contained in the Mediterranean. Japan was not able to offer any direct aid, and was not capable of greatly affecting the naval balance in European waters.

German naval power, despite its potential greatness, was poorly represented in 1939. Only two battleships, Scharnhorst and Gneisenau, were in full commission, and two more were nearing fully operational status, Bismarck and Tirpitz. Three pocket battleships were available for use, these being the Deutschland, Admiral Scheer, and Graf Spee. Only three heavy cruisers were in a state of operational readiness, Admiral Hipper, Blücher, and Prinz Eugen. Two more were nearing commission Seydlitz and Lützow (to be given to the Soviet Union as specified in the terms of the Soviet-German Non-Aggression Pact). Nine light cruisers were available, with two more nearing completion. A woefully inadequate force of thirty-four destroyers and torpedo boats was available, which combined with escort ships were needed to protect the fleet, and conduct small independent operations.¹⁷¹

A large number of ships under construction were destined never to be completed or commissioned. This group includes four large battleships, two aircraft carriers, and three battle cruisers. The necessities of war forced the abandonment of this part of the construction program.¹⁷²

Germany was to find the greatly superior fleets of Great Britain and France ranged against her. A key class in the naval balance of power was the battleship: Great Britain possessed fifteen and France possessed seven. Germany was outclassed in heavy cruisers, Great Britain operating fifteen and France operating seven. Allied superiority was

increasingly evident in light cruisers, Great Britain possessing forty-nine and France twelve. Destroyer superiority was very evident as Great Britain had 183 and France seventy-two. In aircraft carriers, Germany possessed none, while Great Britain had six and France had one. The Allies also had a considerable number of vessels nearing launch and commissioning.¹⁷³ It should be pointed out that the French could not be fully deployed in the Atlantic as considerable forces were necessary to guard against Italian naval action.

Chapter XI

NAVAL ARCHITECTURE

German naval architecture was to be proven the equal or superior of any other nation's naval architecture. The tradition of extremely powerful ships that were difficult to sink, and would remain afloat after tremendous damage was carried on by the new fleet.¹⁷⁴ Versailles Treaty regulations seem to have had little effect in preventing development of modern powerful warships.

Battleship development is the best point to begin. Bismarck and Tirpitz are the only two full battleships to be completed by the German Navy. These ships were to combine high speed, powerful armament, heavy armor protection, and long-range in a single highly efficient design.¹⁷⁵ They represent the German Navy's intention never again to be trapped in the North Sea by the British Navy, but rather to operate on the high seas that were the key to the existence of England as a nation. Each element was an integral part of the desire to permit high seas operations against Britain. High speed was necessary for catching British merchant ships, escaping superior forces, bringing inferior forces to combat, and swiftly changing position. The swift change of location was necessary to keep British naval forces confused and

dispersed, so as to hinder efficient concentration of forces that could force German units to do battle foredoomed to destruction. Powerful 15 inch main armament would allow the British to be met on equal terms in weight of shell and range of engagement. Also, it would allow the destruction of merchant ships in convoy without having to close to a range where escorts might damage the ship, and thus hinder further operations. A powerful secondary armament was carried to deal with light forces that closed in, and were not powerful enough to concern the main battery, or were under the arc of fire of the main battery. Heavy anti-aircraft armament is self-explanatory, and shows appreciation for the growing importance of aircraft in naval operations. Heavy armor protection minimized the chances of damage in naval action. A belt of 12.6 inches of armor was not complete protection against close range direct hits, but at the normal battle range of several miles it prevented penetration of a projectile. An eight inch thick armored deck was protection against most bombs, and fourteen inch turret armor insured against most chances of penetration that would endanger the ship by threatening a magazine explosion.¹⁷⁶ The long distances these ships were capable of traveling would allow deep penetration into British shipping lanes, and operations in the key South Atlantic area, contributing further to dispersion of British naval forces, and ensuring that British merchant ships could not be left unprotected anywhere. A great deal of attention

was paid to complex internal subdivision. Internal subdivision limited the damage from any shell hit or torpedo, and was to enable German warships to stay afloat under a tremendous battering. Illustration of the effect can be seen from the necessity of scuttling the Bismarck to keep the helpless hulk from falling into British hands, and the use of six ton bombs to destroy the Tirpitz.¹⁷⁷

Germany introduced a new concept with the appearance of the pocket battleship (officially classed as armored ships). Pocket battleship design was specifically directed at creating a very powerful ship on a relatively light displacement, combined with high speed. The combination resulted in a ship that could outfight existing heavy cruisers, and outrun all but a handful of more powerful ships. These ships were the first to use electric welding in their hulls, thus saving many tons. Light metals were used wherever possible to further save weight. Diesel engines were used in place of steam turbines for the first time in a large ship, increasing the power to weight ratio and cruising range. Deutschland class pocket battleships represented the ideal type of ship for the raiding of Britain's far flung shipping lanes. They too possessed the immense structural strength to be found in all German warship designs.¹⁷⁸

Two German battle cruisers (classed as battleships), Scharnhorst and Cneisenau, were completed. These share the

characteristics of the battleships and pocket battleships, but have a higher speed of 32 knots. The characteristics of these ships would prove them to be extremely formidable opponents.¹⁷⁹ Great structural strength was illustrated by the Scharnhorst when in December, 1943, torpedoes had to be used to sink her after she had been battered to a helpless wreck by the Duke of York.¹⁸⁰

Heavy cruisers were smaller editions of battleships as far as general characteristics. They were capable of independent operations, and were used where the employment of larger warships could not be justified. Heavy cruisers close resemblance to battleships in characteristics made these lighter ships excellent consorts for the battleships in operations (Prinz Eugen accompanying the Bismarck in 1941). Also, they could support land operations, as illustrated by the Norwegian campaign of 1940.¹⁸¹

Light cruisers had the same general characteristics of structural strength, high speed, and strong armament as the other German warships. Light cruisers were to serve as surface reconnaissance vessels, heavy patrol ships, and escort forces for the fleet. This type is a necessity for any balanced fleet as heavier vessels and light ships simply are not suited for many tasks that a light cruiser efficiently carries out.

Germany's destroyers were noted for their power and high quality. Their armament was the equivalent or

superior to the destroyers of any other nation's. Destroyers are the backbone of anti-submarine defense of a fleet or convoy, and are necessary to any navy. Provisions were made in German destroyer design to allow them to lay mines, in accordance with plans to employ them in independent operations in Zone I, as prescribed by the operational plans.¹⁸²

Torpedo boats represent the last class worthy of consideration as an operational fleet unit. German torpedo boats should not be confused with the motor torpedo boats used by other navies; rather, the best equivalent would be found in destroyer escorts, corvettes, and frigates of other navies.¹⁸³ They were designed as light escort forces for patrol and convoy protection. Their use was to be restricted to coastal waters and short range open seas operations where it would not be justified to waste a destroyer that could be usefully employed elsewhere. They had a rather considerable anti-submarine capacity.

Chapter XII

TRAINING

Training is a vital element in developing the combat effectiveness of any military force. No matter how well a naval force is equipped if the men are not trained to use the equipment effectively it is just a pile of worthless scrap metal. Thus, the German Navy developed an effective training establishment.

We will first consider the training of the enlisted men, which make up the bulk of any military force. Induction is the first step in recruit training. At this point he is administered the oath of allegiance to the state and Fuhrer. After induction the recruit is sent to a basic training camp. Basic training consisted of a six month course. Six months were used to train the recruit in basic military accomplishments, military courtesy, rank structure, badges of rank, and necessary skills to a sailor such as seamanship, fire fighting, and small boat handling. After the completion of basic, those selected for further training would be sent to their specialist schools. Men not selected for specialized training would be assigned to ships or shore establishments as needed.¹⁸⁴ Special training included communications, gunnery control, torpedo, electrical, damage control, engineering, medical orderly, and supply schools to name a few.

An officer cadet followed a different course of training. After induction an officer cadet went through the same six-month basic training course as the enlisted men. Then he would be sent to one of the two academies, depending on whether he was to be a line officer or an engineering officer. Line officers went to Kiel-Wik, and engineering officers were sent to Flensburg-Mürwick. At Kiel-Wik the line officer cadet was trained in tactics, an overview of strategy, naval theory, and various technical subjects such as gunnery. Also periodic cruises would be undertaken with the sail training ships to teach seamanship and self-reliance.¹⁸⁵ At the conclusion of the last year a foreign cruise would be undertaken in one of the cruisers or old battleships to give the cadet experience in command and weed out those who were not fit to handle command responsibility. Then the officer cadet would be commissioned as an ensign on his return to Germany.¹⁸⁶ Assignment within a chain of command could follow or further technical training in areas such as gunnery or communications. Officer cadets sent to the engineering school at Flensburg-Mürwick were trained to operate and maintain the propulsion units, and other machinery necessary to the operation of a modern warship.¹⁸⁷ They used the training ship Bremse for cruises to gain engineering experience.¹⁸⁸

Higher training was not neglected, as experience alone cannot qualify an officer to hold a command position.

A year long course was developed to train staff officers in the higher realms of strategy and naval theory. The theoretical training and the training of strategic thought were to prepare the men to handle the concept of sea war and its global consequence, and thus allow them to plan naval operations in a realistic manner in relation to the resources at hand.¹⁸⁹

Chapter XIII

ORGANIZATION AND COMMAND STRUCTURE

Hitler stood at the top of the command structure as supreme head of the German state and its armed forces. Next in line was the High Command of the Armed Forces (Oberkommando der Wehrmacht - OKW), which exercised little control in the area of naval affairs. OKW was the command and co-ordination staff made up of the heads of all the armed services, and staffs made up of members of all elements of the German military. Next in line was the High Command of the Navy (Oberkommando der Marine - OKM). This staff was headed by Grand Admiral Raeder, as commander of the navy.¹⁹⁰ OKM was left in virtual control of all naval operations, and was to deal directly with Hitler, rather than going through OKW, as proper staff organization would have required. Rear Admiral Otto Schniewind was chief of staff under Raeder, and headed the naval planning staff, controlled naval operations in distant ocean areas, and saw to the control of supplies.¹⁹¹

Naval Group West was the next step under OKM. Headed by Admiral Alfred Saalwächter, it controlled naval operations in the North Sea. Equal in importance was Naval Group East under Admiral Conrad Albrecht, which was to control naval operations in the Baltic.¹⁹²

The next step was represented by the commander of the fleet, Admiral Herman Boehm. He was in direct command of all German naval units. German naval units operated on the task force concept, and thus when an operation was planned the units were taken from the fleet and a commander appointed for that specific operation, and under the general authority of the fleet commander. Should a general fleet action ever been planned the commander of the fleet would be in direct command of all units involved. This organization eliminated any permanent command structure for fleet units outside of that meant to control the fleet as a whole.¹⁹³

OKM contained departments and bureaus as part of the staff controlled by the chief of staff for the commander of the navy. Examples of these would be operations, intelligence, supply, construction, training, and research and development. The departments and bureaus took care of the planning and running of the navy, and were to see that an efficient fighting force was maintained at all times. As a staff they were to see that the commander of the navy was informed of all events and developments through the chief of staff. Also. they were to see that the order of the commander and the navy were swiftly transmitted and carried out.¹⁹⁴

Chapter XIV

SUMMARY

Germany was stripped of her modern naval units that had not been scuttled at Scapa Flow through the Versailles Treaty. The naval provisions of the treaty were carefully written to prevent any rebuilding of German naval power by severely restricting the number and size of the warships and the manpower available to the navy. These restrictions clearly show the allied determination to prevent Germany from ever again becoming a great power with vast influence upon the world. Allied experiences in World War I had been such that every major power wished to eliminate the chance of having to face Germany in another naval war.

Naturally Germany found these restrictions that reduced their once great navy to a mere coastal defense force very distasteful. They proceeded to make the efforts to destroy German naval power a complete failure by using their famed ingenuity to create a powerful fleet that could represent German power on the high seas while appearing to abide by the treaty terms. The highest expression of their ingenuity would be the pocket battle-ships Deutschland, Admiral Scheer, and Admiral Graf Spee. These powerful warships were very close to abiding with the treaty terms, but were a totally different type of

ship from what the Allies had expected the naval restrictions to create. The Allies had not thought that a powerfully armed long range warship that could threaten their control of the sea (largely by the superiority of the British Navy) could be created within limitations.

The success of German efforts to evade the Allied intention to prevent Germany from ever regaining her status as a great naval power can be illustrated by her battle of the River Plate. At this battle, which was the high point of a long raiding cruise, Captain Langsdorf's Graf Spee would meet Commodore Harwood's cruiser squadron made up of the heavy cruiser Exeter and the light cruisers Ajax and Achilles.¹⁹⁵

This battle would see the Graf Spee knock out Exeter's gun turrets and destroy the Ajax's two rear turrets as well as inflicting some damage to the Achilles.¹⁹⁶ The Graf Spee received only seventeen hits, the most serious being the destruction of a main turret range finder preventing centralized gun control on one side. Also she had received a hit on the bow that had created a hole six feet by six feet. Despite this damage the Graf Spee was still fully capable of continuing operations with great effect.¹⁹⁷ After the British cruisers had broken off the action due to the damage they had sustained, which made further combat useless, Captain Langsdorf made the decision to enter the neutral harbor of Montevideo to carry out repairs. He felt repairs would be necessary to allow the Graf Spee the best possible

chance to return to Germany through the Atlantic and North Sea.¹⁹⁸ Captain Langsdorf decided to scuttle his best ship at Montevideo after becoming convinced that his ship was faced with a greatly superior force that had been assembled while his sailing date had been delayed through British use of the neutrality rules. He firmly believed in the truth of the reports which claimed that large British forces, including a battle cruiser and an aircraft carrier were waiting for him to leave harbor. Langsdorf did not believe that he could fight a battle with any hope of success considering the small amount of ammunition remaining. Also he could not outrun the opposing forces as the battle cruiser could attain a higher speed than the Graf Spee.¹⁹⁹ In my opinion the Graf Spee should not have scuttled herself as the ship was fully capable of fighting a battle, and even if the superior had existed, she would have been able to inflict serious damage on the British units and perhaps could have escaped. In any case the Graf Spee would have been able to deal with the cruiser force that was present and probably could have escaped to return to Germany.

Adolf Hitler's coming to power was to ensure that naval expansion beyond treaty limitations would be pursued. Naval expansion would be legalized through the Anglo-German Naval Agreement of 1935, which broke the limitations imposed by Versailles. Germany was allowed to build thirty-five per cent of British naval tonnage under the

terms of this agreement. This agreement opened the way for the building of the powerful battleships Scharnhorst, Gneisenau, Bismarck, and Tirpitz, which would cause the Allies so many problems during the Second World War. It also allowed the formulation of Z-Plan for the building of a balanced fleet that could operate effectively on the high seas against any enemy and particularly Great Britain.

Germany's new fleet would see its first combat with its interventions in the Spanish Civil War. This war provided the opportunity to test the equipment and training of the fleet, and would offer valuable experience that could be used in the future. It would prove that Germany's Navy was capable of conducting operations under wartime conditions well away from home waters for extended periods.

Naval development had followed the signing of the Anglo-German Naval Agreement at a very fast pace, but the German Navy was still not ready for war on September 1, 1939. The long range Z-Plan for the development of the German fleet was not completed in September, 1939, but the German Navy still had to conduct combat operations. Germany was forced to fight with the smaller number of warships that were completed or nearing completion. War plans had to be redrawn as the basic plan had envisioned a much larger fleet available for operations.

The war would prove the German fleet to be of very high quality, and if the war had not prevented its full development the German fleet would have been more difficult

to deal with at a later date. The conduct of the naval war would have presented an entirely different picture if Z-Plan had been completed, which would have meant that the war would have had to have been at a much later date. In a very few words, Germany's navy was simply not ready for war in 1939 despite the vast amount invested in the building of the new fleet. A sufficient amount of time had not been available to allow the construction of the warships that could have effectively carried out a surface war at sea.

Appendix I

THE TREATY OF VERSAILLES²⁰⁰

Article 181.

After the expiration of a period of two months from the coming into force of the present Treaty the German naval forces in commission must not exceed:

6 battleships of the Deutschland or
Lothringen types,
6 light cruisers,

12 destroyers,
12 torpedo boats,

or an equal number of ships constructed to replace them as provided in Article 190.

No submarines are to be included.

All other warships, except where there is provision to the contrary in the present Treaty, must be placed in reserve or devoted to commercial purposes.

.....

Article 182.

Until the completion of the minesweeping prescribed by Article 193 Germany will keep in commission such number of minesweeping vessels as may be fixed by the Governments of the Principal Allied and Associated Powers.

Article 183.

After the expiration of a period of two months from the coming into force of the present Treaty the total personnel of the German Navy, including the manning of the fleet, coastal defences, signal stations, administration and other land services, must not exceed fifteen thousand, including officers and men of all grades and corps.

The total strength of officers and warrant officers must not exceed fifteen hundred.

Within two months from the coming into force of the present Treaty, the personnel in excess of the above strength shall be demobilized.

No naval or military corps or reserve force in connection with the Navy may be organised in Germany without being included in the above strength.

.....

Article 184.

From the date of the coming into force of the present Treaty all the German surface warships which are not in German ports cease to belong to Germany, who renounces all rights over them.

Vessels which, in compliance with the Armistice of November 11, 1918, are now interned in the ports of the Allied and Associated Powers are declared to be finally surrendered.

Vessels which are now interned in neutral ports will be there surrendered to the Governments of the Principal Allied and Associated Powers. The German Government must address a notification to that effect to the neutral powers on the coming into force of the present Treaty.

Article 185.

Within a period of two months from the coming into force of the present Treaty the German surface warships enumerated below will be surrendered to the Governments of the Principal Allied and Associated Powers in such Allied ports as the said Powers may direct.

.....

These warships will have been disarmed as provided in Article XXIII of the Armistice of November 11, 1918. Nevertheless they must have all their guns on board.

BATTLESHIPS.

Oldenburg.

Posen.

Thuringen.

Westfalen.

Ostfriesland.

Rheinland.

Helgoland.

Nassau.

LIGHT CRUISERS

Stettin.

Stralsund.

Danzig.

Augsburg.

München.

Kolberg.

Stuttgart.

and, in addition, forty-two modern destroyers and fifty modern torpedo boats, as chosen by the Governments of the principal Allied and Associated Powers.

.....

Article 186.

On the coming into force of the present Treaty the German Government must undertake, under the supervision of the Governments of the Principal Allied and Associated Powers, the breaking-up of all the German surface warships now under construction.

Article 187.

The German auxiliary cruisers and fleet auxiliaries enumerated below will be disarmed and treated as merchant ships.

INTERNEED IN NEUTRAL COUNTRIES:

Berlin.

Seydlitz.

Santa Fe'.

Yorck.

IN GERMANY:

Ammon.

Fürst Bülow.

Answald.

Gertrud.

Bosnia.

Kigoma.

Cordoba.

Rugia.

Cassel.

Santa Elena.

Dania.

Schleswig.

Rio Negro.Möwe.Rio Pardo.Sierra Ventana.Santa Cruz.Chemnitz.Schwaben.Emil Georg von Strauss.Solingen.Habsburg.Steigerwald.Meteor.Franken.Waltraute.Gundomar.Scharnhorst.

.....

Article 188.

On the expiration of one month from the coming into force of the present Treaty all German submarines, submarine salvage vessels and docks for submarines, including the tubular dock, must have been handed over to the Governments of the Principal Allied and Associated Powers.

Such of these submarines, vessels and docks are considered by the said Governments to be fit to proceed under their own power or to be towed shall be taken by the German Government into such Allied ports as have been indicated.

The remainder, and also those in course of construction, shall be broken up entirely by the German Government under the supervision of the said Governments. The breaking-up must be completed within three months at the most after the coming into force of the present Treaty.

Article 189.

Articles, machinery and material arising from the breaking-up of German warships of all kinds, whether surface vessels or submarines, may not be used except for purely industrial or commercial purposes.

They may not be sold or disposed of to foreign countries.

Article 190.

Germany is forbidden to construct or acquire any warships other than those intended to replace the units in commission provided for in Article 181 of the present Treaty.

The warships intended for replacement purposes as above shall not exceed the following displacement:

Armoured ships	10,000 tons,
Light cruisers	6,000 tons,
Destroyers	800 tons,
Torpedo boats.	200 tons.

Except where a ship has been lost, units of the different classes shall only be replaced at the end of a period of twenty years in the case of battleships and cruisers, and fifteen years in the case of destroyers and torpedo boats, counting from the launching of the ship.

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Article 191.

The construction or acquisition of any submarine, even for commercial purposes, shall be forbidden in Germany.

.....

Article 192.

The warships in commission of the German fleet must have on board or in reserve only the allowance of arms, munitions and war material fixed by the Principal Allied and Associated Powers.

.....

Within a month from the fixing of the quantities as above, arms, munitions and war material of all kinds, including mines and torpedoes, now in the hands of the German Government and in excess of the said quantities, shall be surrendered to the Governments of the said Powers at places to be indicated by them. Such arms, munitions and war material will be destroyed or rendered useless.

All other stocks, depots or reserves of arms, munitions or naval war material of all kinds forbidden.

The manufacture of these articles in German territory for, their export to, foreign countries shall be forbidden.

.....

Article 193.

On the coming into force of the present Treaty Germany will forthwith sweep up the mines in the following

areas in the North Sea to the eastward of longitude $4^{\circ}00'$ E. of Greenwich:

(1) Between parallels of latitude $53^{\circ}00'$ N. and $59^{\circ}00'$ N.; (2) To the northward latitude of $60^{\circ}30'$ N.

Germany must keep these areas free from mines.

Germany must also sweep and keep free from mines such areas in the Baltic as may ultimately be notified by the Governments of the Principal Allied and Associated Powers.

Article 194.

The personnel of the German Navy shall be required entirely by voluntary engagements entered into for a minimum period of twenty-five consecutive years for officers and warrant officers; twelve consecutive years for petty officers and men.

The number engaged to replace those discharged for any reason before the expiration of their term of service must not exceed five per cent per annum of the totals laid down in this section (Article 183).

The personnel discharged from the Navy must not receive any kind of naval or military training or undertake any further service in the Navy or Army.

Officers belonging to the German Navy and not demobilised must engage to serve till the age of forty-five, unless discharged for sufficient reasons.

No officer or man of the German mercantile marine shall receive any training in the Navy.

In order to ensure free passage into the Baltic to all nations, Germany shall not erect any fortifications in the area comprised between latitudes $55^{\circ}27'$ N. and $54^{\circ}00'$ N. and longitudes $9^{\circ}00'$ E. and $16^{\circ}00'$ E. of the meridian of Greenwich, nor instal any guns commanding the maritime routes between the North Sea and the Baltic. The fortifications now existing in this area shall be demolished and the guns removed under the supervision of the Allied Governments and in periods to be fixed by them.

The German Government shall place at the disposal of all Governments of the Principal Allied and Associated Powers all hydrographical information now in its possession concerning the channels and adjoining waters between the Baltic and the North Sea.

Article 196.

All fortified works and fortifications, other than those mentioned in Section XIII (Heligoland) of Part III (Political Clauses for Europe) and in Article 195, now established within fifty kilometres of the German coast or on German islands off that coast shall be considered as of a defensive nature and may remain in their existing condition.

No new fortifications shall be constructed within these limits. The armament of these defences shall not exceed, as regards the number and calibre of guns, those in

position at the date of the coming into force of the present Treaty. The German Government shall communicate forthwith particulars thereof to all the European Governments.

On the expiration of a period of two months from the coming into force of the present Treaty the stocks of ammunition for these guns shall be reduced to and maintained at a maximum figure of fifteen hundred rounds per piece for calibres of 4.1-inch and under, and five hundred rounds per piece for higher calibres.

.....

Article 197.

During the three months following the coming into force of the present Treaty the German high-power wireless telegraphy stations at Nauen, Hanover and Berlin shall not be used for the transmission of messages concerning naval, military or political questions of interest to Germany or any state which has been allied to Germany in the war, without the assent of the Governments of the Principal Allied and Associated Powers. These stations may be used for commercial purposes, but only under the supervision of the said Governments, who will decide the wave-length to be used.

During the same period Germany shall not build any more high power wireless telegraphy stations in her own territory or that of Austria, Hungary, Bulgaria or Turkey.

Appendix II

MAJOR WARSHIPS OF THE GERMAN NAVY AFTER VERSAILLES

BATTLESHIPS

Hannover. Schleswig-Holstein. Schlesien.

Launch dates: Hannover: September, 1905; Schleswig-Holstein: December, 1906; Schlesien: May, 1906.

Displacement: 13,200 tons.

Dimensions: 413 X 72-4/5 X 25-1/4 feet.

Armament: 4 - 11 inch (2X2), 14 - 6.7 inch (14X1), 20 - 3.4 inch (20X1) guns, 6 submerged 17.7 inch torpedo tubes.

Armor: Belt: 9-1/2 inches (admidships), 4 inches (ends). Deck: 3 - 1-1/2 inches, Barbettes: 11 inches, Turrets: 10 inches, side battery 6-3/4 inches, Conning Towers: 12 inches (fore), 6 inches (aft).

Machinery: 3 shaft triple expansion engines, I.H.P. 17,000 = 18 knots.

Radius: 5,500 nautical miles at 10 knots.²⁰¹

Braunschweig. Elsass. Lothringen. Hessen. Preussen.

Launch dates: Braunschweig: December, 1902; Elsass: May, 1903; Lothringen: May, 1904; Hessen: September, 1903; Preussen: October, 1903.

Displacement: 13,200 tons.

Dimensions: 413-1/3 X 72-4/5 X 25-3/4 feet.

Armament: 4 - 11 inch (2X2), 14 - 6.7 inch (14X1), 18 - 3.4 inch (18X1) guns, 5 submerged and 1 above water 17.7 inch torpedo tubes.

Armor: Belt: 8-3/4 inches (admidships) 4 inches (ends), 3 inch deck on slopes, Barbettes:

11 inch, Main Turrets: 11 inch, Lower Deck:
 5 inch, Battery: 6 inch, secondary turrets:
 6-3/4 inch, Conning Towers: 12 inch (fore),
 6 inch (aft).

Machinery: 3 shaft triple expansion engines, I.H.P.
 16,000 = 18 knots.

Radius: 5,500 nautical miles at 10 knots.²⁰²

LIGHT CRUISERS

Berlin. Hamburg.

Launch dates: Hamburg: July, 1903; Berlin: September,
 1903.

Displacement: 3,250 tons.

Dimensions: 362-9/10 X 43-3/10 X 17-1/2 feet.

Armament: 10 - 4.1 inch (10X1), 2 machine guns (2X1)
 guns, 108 mines, 2 submerged 17.7 inch
 torpedo tubes.

Armor: Deck: 2 inches, 3/9 inch at ends, Conning
 Tower: 4 inches.

Machinery: 2 sets of 4 cyclinder triple expansion
 engines, S.H.P. 10,000 = 22 knots.

Radius: 5,900 nautical miles at 10 knots.²⁰³

Arkona.

Launch date: April, 1902.

Displacement: 2,700 tons.

Dimensions: 342-4/10 X 40-3/10 X 17-1/4 feet.

Armament: 10 - 4.1 inch (10X1), 2 machine guns, 2
 submerged 17.7 inch torpedo tubes, 400
 mines.

Armor: Deck: 2 inches, Conning Tower: 4 inches.

Machinery: 2 sets of 4 cyclinder triple expansion
 engines, S.H.P. 8,000 = 21.5 knots. ²⁰⁴

Nymphe. Thetis. Amazone. Medusa.

77

Launch dates: Nymphe: 1899, Thetis: 1900, Amazone: 1900,
Medusa: 1900.

Displacement: 2,650 tons.

Dimensions: 324-4/10 X 38-7/10 X 17-1/4 feet.

Armament: 6 - 4.1 inch (6X1), 2 machine guns, 2
submerged 17.7 inch torpedo tubes.

Armor: Deck: 2 inches (amidships), 3/4 inch (ends),
3-1/2 inch glacis to engine room hatches,
Conning Tower: 3 inches.

Machinery: 2 sets 4 cyclinder triple expansion engines,
S. H. P. 8,000 = 21 knots. 205

Niobe.

Launch date: 1899

Displacement: 2,600 tons.

Dimensions: 342-5/10 X 38-7/10 X 17-1/4 feet.

Armament: 10 - 4.1 inch (10X1), 2 machine guns, 2
submerged 17.7 inch torpedo tubes.

Armor: Deck: 2 inches (amidships), 3/4 inch (ends),
3-1/2 glacis to hatches, Conning Tower: 3
inches.

Machinery: 2 sets 4 cyclinder triple expansion engines,
S. H. P. 8,000 = 21.5 knots. 206

Appendix III

COMBAT SHIPS OF THE GERMAN NAVY - 1939

BATTLESHIPS

Bismarck. Tirpitz.

Launch dates: Bismarck: February 2, 1939; Tirpitz: April 4, 1939.

Builders: Bismarck, Blohm and Voss, Hamburg; Tirpitz, Wilhelmshaven Dock Yard.

Displacement: Bismarck, 41,700 tons; Tirpitz, 42,900 tons.

Dimensions: 792 X 118 X 26 feet.

Machinery: 3 shaft geared turbines, S.H.P. 138,000 = 30 knots.

Radius: Bismarck, 8,100 miles at 19 knots; Tirpitz, 9,000 miles at 19 knots.

Protection: Main belt: 12.6 inches; turrets: 14 inches; deck: 8 inches.

Armament: 8 - 15 inch (4X2), 12 - 5.9 inch (6X2), 16 - 4.1 inch AA (8X2), 16 - 37mm AA (8X2),
 Bismarck 12/ Tirpitz 16 - 20mm AA guns;
 8 - 21 inch torpedo tubes (4X2); 6 aircraft.

Complement: 2,400.²⁰⁷

Scharnhorst. Gneisenau.

Launch dates: Scharnhorst: October 8, 1936; Gneisenau: December 8, 1936.

Builders: Scharnhorst, Wilhelmshaven Dock Yard;
 Gneisenau, Deutsche Werke, Kiel.

Displacement: 32,000 tons.

Dimensions: 741-1/2 X 98-1/2 X 24-1/2 feet.

Machinery: 3 - shaft geared turbines, S.H.P. 160,000
= 31-1/2 knots.

Radius: 10,000 miles at 19 knots.

Protection: Main belt: 12-13 inches; turrets: 12
inches; decks: 6 inches.

Armament: 9 - 11 inch (3X3), 12 - 5.9 (4X2, 4X1),
14 - 4.1 inch AA (7X2), 16 - 37mm AA
(8X2), 10 - 20mm AA guns; 6 - 21 inch
torpedo tubes (2X3); 4 aircraft. 208

ARMORED SHIPS (POCKET BATTLESHIPS)

Deutschland. Admiral Scheer. Admiral Graf Spee.

Launch dates: Deutschland: May 19, 1931; Admiral Scheer:
April 1, 1933; Admiral Graf Spee: June 30,
1934.

Builders: Deutschland, Deutsche Werke, Kiel; Admiral
Scheer, Wilhelmshaven Dock Yard; Admiral
Graf Spee, Wilhelmshaven Dock Yard.

Displacement: 12,100 tons, except Deutschland: 11,700.

Dimensions: 593 (w.l.) 609 (o.a.) X 70 (Deutschland
67-1/2) X 21-1/2 feet.

Machinery: 2 - shaft diesels, B.H.P. 56,000 = 26 knots.

Radius: 19,000 miles at 19 knots.

Protection: Side: 4 inches, turrets: 2 - 5-1/2 inches,
deck: 1-1/2 - 3 inches, C.T. 2-5 inches.

Armament: 6 - 11 inch (2X3), 8 - 5.9 inch (8X1),
6 - 4.1 inch AA (3X2), 8 - 37mm AA (4X2),
10 - 20mm AA guns, 8 - 21 inch torpedo
tubes (2X4), 2 aircraft.

Complement: 1,150.²⁰⁹

HEAVY CRUISERS

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Admiral Hipper. Blücher. Prinz Eugen. Seydlitz. Lützow.

Daunch dates: Admiral Hipper: February 6, 1937; Blücher: June 8, 1937; Prinz Eugen: August 22, 1938; Seydlitz: January 19, 1939; Lützow: July 1, 1939.

Builders: Admiral Hipper, Blohm and Voss, Hamburg; Blücher, Deutsche Werke, Kiel; Prinz Eugen, Germania Werft, Kiel; Seydlitz, Deschimag, Bremen; Lützow, Deschimag, Bremen.

Displacement: 13,900 tons.

Dimensions: Hipper and Blücher: 640 X 70 X 15 feet; Others: 654 X 71 X 15 feet.

Machinery: 3 - shaft geared turbines, S.H.P. 132,000 = 32 knots.

Radius: 6,800 miles at 18 knots.

Protection: Side: 5 inches, deck: 4 inches, turrets: 5 inches.

Armament: 8 - 8 inch (4X2), 12 - 4.1 inch AA (6X2), 12 - 37mm AA (6X2), 8 - 20mm AA; 12 - 21 inch torpedo tubes (4X3), 3 aircraft.

Complement: 1,600.²¹⁰

LIGHT CRUISERS

Emden.

Launch date: January 7, 1925.

Builder: Wilhelmshaven Dock Yard.

Displacement: 5,600 tons.

Dimensions: 493 (w.l.) 508 (o.a.) X 47 X 17-1/2 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 46,000 = 29 knots.

Radius: 5,300 miles at 18 knots.

Protection: Sides: 3-4 inches, gun houses: 2 inches. C.T.: 3 inches.

Armament: 8 - 5.9 inch (8X1), 3 - 3.5 inch AA (3X1),
4 - 37mm AA, 4 - 21 inch torpedo tubes (2X2).

Complement: 630.²¹¹

Köln. Karlsruhe. Königsberg.

Launch dates: Königsberg: March 26, 1927; Karlsruhe:
August 20, 1927; Köln: May 23, 1928.

Builders: Königsberg, Wilhelmshaven Dock Yard;
Karlsruhe, Deutsche Werke, Kiel; Köln,
Wilhelmshaven Dock Yard.

Displacement: 6,650 tons.

Dimensions: 554 (w.l.) 570 (o.a.) X 50 X 18 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 68,000
plus 2 diesels B.H.P. 1,800 for cruising
= 32 knots.

Radius: 5,200 miles at 19 knots.

Protection: Sides: 3-4 inches, turrets: 3 inches,
C.T.: 3 inches.

Armament: 9 - 5.9 inch (3X3), 6 - 3.5 inch AA (3X2),
8 - 37mm AA (4X2), 12 - 21 inch torpedo
tubes, 2 aircraft.

Complement: 820.²¹²

Leipzig.

Launch date: October 18, 1929.

Builder: Wilhelmshaven Dock Yard.

Displacement: 6,710 tons.

Dimensions: 544 (p.p.) 580 (o.a.) X 53-1/2 X 15-3/4
feet.

Machinery: 2 - shaft geared turbines, S.H.P. 66,000
plus 1 shaft diesel B.H.P. 12,400 for
cruising = 32 knots.

Protection: Sides: 3-4 inches, turrets: 2 inches,
C.T.: 2 inches.

Armament: 9 - 5.9 inch (3X3), 8 - 3.5 inch AA (4X2)
guns, 12 - 21 inch torpedo tubes (4X8),
2 aircraft.

Complement: 850.213

Nürnberg.

Launch date: December 8, 1934.

Builder: Deutsche Werke, Kiel.

Displacement: 6,980 tons.

Machinery: 2 - shaft geared turbines S.H.P. 66,000 plus
1 shaft diesel B.H.P. 12,400 for cruising
= 32 knots.

Dimensions: 558 (p.p.), 603 (o.a.) X 54 X 14-1/2 feet.

Radius: 5,700 miles at 19 knots.

Protection: Sides: 3-4 inches, turrets: 2 inches,
C.T.: 3 inches.

Armament: 9 - 5.9 inch (3X3), 8 - 3.5 inch AA (4X2),
8 - 37mm AA (4X2) guns, 12 - 21 inch torpedo
tubes (4X3), 2 aircraft.

Complement: 896.214

DESTROYERS

Lebrecht Maas

Max Schultz

Paul Jacobi

Hermann Schoemann

Wolfgang Zenker

Benrid von Arnim

Erich Koelner

Erich Steinbrinck

Georg Thiele

Richard Beitzen

Theodor Reidel

Bruno Heinemann

Hans Lody

Erich Geise

Fredrich Ihn

Fredrich Eckoldt

Launch dates: Lebrecht Maas, Georg Thiele, Max Schultz,
Richard Beitzen, Fredrich Ihn; all 1935.

Paul Jacobi, Theodor Reidel, Hermann Schoemann, Bruno Heinemann, Wolfgang Zenker,
Erich Steinbrinck, Erich Ceise; all 1936.

Erich Koelner, Fredrich Ecktoltdt; 1937.

Hans Lody, Benrid von Arnim; 1938.

Builders:

Lebrecht Maas, Georg Thiele, Max Schultz,
Richard Beitzen; Deutsche Werke, Kiel.

Paul Jacobi, Theodor Reidel, Herman Schoemann, Bruno Heinemann; Deschimag, Bremen.

Wolfgang Zenker, Hans Lody, Benrid von Arnim,
Erich Geise, Erich Koellner; Germania Werft.

Fredrich Ihn, Erich Steinbrinck, Fredrich Ecktoltdt; Blohm and Voss, Hamburg.

Displacement: 2,200 tons.

Dimensions: 374 X 37 X 9-1/2 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 70,000 =
30 knots.

Radius: 4,400 miles at 19 knots.

Armament: 5 - 5 inch (5X1), 4 - 37mm (2X2), 6 - 20 mm
AA guns, 8 - 21 inch torpedo tubes (2X4),
60 mines.

Complement: 315. ²¹⁵

Diether von Roeder. Hans Ludemann. Herman Kunne. Karl

Galster. Wilhelm Heidkamp. Anton Schmitt.

Launch dates: Karl Galster, 1938.

Diether von Roeder, Hans Ludemann, Hermann Kunne, Wilhelm Heidkamp, Anton Schmitt; all
1939.

Displacement: 2,400 tons.

Dimensions: 384 X 38-1/2 X 9-1/2 feet.

Machinery:

2 - shaft geared turbines S.H.P. 70,000 = 38 knots. 84

Radius:

4,850 miles at 19 knots.

Armament:

5 - 5 inch (5X1), 6 - 37mm AA (2X2, 2X1),
12 - 20mm AA guns, 8 - 21 inch torpedo
tubes (2X4), 60 mines.

Complement:

313.²⁶⁶

TORPEDO BOATS

Möwe. Seeadler. Kondor. Greif. Falke. Albatross.

Launch dates: Möwe, March 4, 1926.

Seeadler, Greif, Albatross; July 15, 1926.

Falke, Kondor; September 22, 1926.

Displacement: 924 tons.

Dimensions: 278 X 27-1/2 X 9 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 23,000 = 32 knots.

Radius: 3,100 miles at 17 knots.

Armament: 3 - 4.1 inch (3X1), 4 - 20mm AA (4X1) guns,
6 - 21 inch torpedo tubes (2X3).

Builder: All; Wilhelmshaven Dock Yard.

Complement: 129.²¹⁷

Wolf. Tiger. Luchs. Leopard. Jaguar. Iltis.

Launch dates: Iltis, Wolf; October 12, 1927.

Jaguar, Leopard, Luchs, Tiger; March, 1928.

Builder: All; Wilmshaven Dock Yard.

Displacement: 933 tons.

Dimensions: 304 X 28 X 9 feet.

Machinery: 2 - shaft geared turbines S.H.P. 23,000 = 33 knots.

Radius: 3,100 miles at 17 knots.

Armament: Luchs and Leopard; 3 - 5 inch (3X1), remainder; 3 - 4.1 inch (3X1), 4 - 20mm AA (4X1) guns, 6 - 21 inch torpedo tubes (3X2).

Complement: 129.218

T1 - T8.

Launch dates: All; 1938.

Builder: T1 - T4; Schichau, Ebling.

T5 - T8; Deschimag, Bremen.

Displacement: 844 tons.

Dimensions: 267 X 28 X 7 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 31,000 = 35-1/2 knots.

Radius: 2,400 miles at 19 knots.

Armament: 1 - 4.1 inch, 8 - 20mm AA (4X2) guns, 6 - 21 inch torpedo tubes (2X3), 30 mines.

Complement: 119.219

ESCORT VESSELS

F1 - F10

Completion dates: F1 - F8; 1936.

F9 - F10; 1937.

Builder: F1 - F6; Germania Werft, Kiel.

F7 - F8; Blohm and Voss, Hamburg.

F9 - F10; Wilhelmshaven Dock Yard.

Displacement: 712 tons.

Dimensions: 241 X 23-3/4 X 8-1/4 feet.

Radius: 1,500 miles at 20 knots.

Armament:

2 - 4.1 inch (2X1), 4 - 37mm AA (2X2),
4 - 20mm AA guns.

Complement:

121.220

Appendix IV

TRAINING SHIPS AND MAJOR PLANNED WARSHIPS OF Z-PLAN

TRAINING SHIPS

Ex-Battleships

Schlesien. Schleswig-Holstein.

Launch dates: Schlesien, May 28, 1906.

Schleswig-Holstein, December 17, 1906.

Builders: Schlesien; Schichau, Danzig.

Schleswig-Holstein; Germania-Werft, Kiel.

Dimensions: 413 X 73 X 25-1/4 feet.

Machinery: 3 - shaft triple expansion engines I.H.P.
 17,000 = 16 knots, coal/oil fired.

Armament: 4 - 11 inch (2X2), 6 - 4.1 inch AA guns.

Complement: 725.²²¹

Gunnery and Mining Training Ships

Brummer.

Launch date: May 29, 1935.

Builder: Deschimag, Bremen.

Displacement: 2,410 tons.

Dimensions: 354 X 44 X 11-1/2 feet.

Machinery: 2 - shaft geared turbines, S.H.P. 8,000 = 20
 knots.

Radius: 2,400 miles at 15 knots.

Armament: 4 - 4.1 inch (2X2), 2 - 3.5 inch (1X2) AA,
 4 - 37mm (2X2) AA guns, 450 mines.

Complement: 182.²²²

88

Bremse.

Launch date: January 24, 1931.
Builder: Wilhelmshaven Dock Yard.
Displacement: 1,460 tons.
Dimensions: 318 X 31 X 9-1/2 feet.
Machinery: 2 - shaft diesels, B.H.P. 26,000 = 27 knots.
Radius: 8,000 miles at 19 knots.
Armament: 4 - 5 inch (4X1), 8 - 20mm AA guns, 350 mines.
Complement: 192.²²³

Sail Training Ships

Gorth Fork.

Launch date: 1933.
Builder: Blohm and Voss, Hamburg.
Displacement: 1,354 tons.
Dimensions: 200 (p.p.) 241-1/2 (o.a.) X 39-1/2 X 15 feet.
Machinery: 1 - shaft auxiliary diesel, B.H.P. 520 knots = 8 knots.
Sail: Barque rig, 19,376 square feet of sail area.
Radius: 3,500 miles at 8 knots (on engine).
Complement: 262, including 200 midshipmen.²²⁴

Albert Leo Schlageter. Horst Wessel.

Launch dates: Horst Wessel, June 13, 1936.

Albert Leo Schlageter, October 31, 1937.

Builder:

Blohm and Voss, Hamburg.

89

Displacement:

1,634 tons.

Dimensions:

265-3/4 (p.p.) 295-1/2 (o.a.) X 39-1/2 X
15-3/4 feet.

Machinery:

1 - shaft diesel engine, B.H.P. 750 = 10 knots.

Radius:

3,500 miles at 10 knots (on engine).

Sail:

Barque rig, 21,530 square feet of sail area.

Complement:

289, including 200 midshipmen.²²⁵

MAJOR PLANNED WARSHIPS OF Z-PLAN

AIRCRAFT CARRIERS

Graf Zeppelin.

B

Launch date:

December 8, 1938.

Displacement:

23,200 tons.

Dimensions:

820 X 88-1/2 X 18-1/2 feet.

Machinery:

4 - shaft geared turbines, S.H.P. 200,000
= 33-1/2 knots.

Radius:

8,000 miles at 19 knots.

Protection:

Sides: 4 inches, deck: 2 inches.

Armament:

16 - 5.9 inch (8X2), 12 - 4.1 inch AA (6X2),
22 - 37mm AA (11X2), 28 - 20mm AA guns.

Aircraft:

42.

Complement:

1,760.²²⁶

BATTLESHIPS

H Class - 6 Ships

Displacement:

56,200 tons.

Dimensions:

866 X 120 X 30 feet.

Machinery:

3 - shaft diesels, B.H.P. 165,000 = 29 knots.

Radius: 16,000 miles at 19 knots.

Armament: 8 - 16 inch (4X2), 12 - 5.9 inch (6X2),
16 - 4.1 inch AA (8X2), 16 - 37mm AA
(8X2), 24 - 20mm AA, 6 - 21 inch torpedo
tubes (2X3), 3 aircraft.

Complement: 2,600.²²⁷

BATTLE CRUISERS

O, P, Q Class

Displacement: 32,300 tons.

Dimensions: 800 X 98 X 23 feet.

Machinery: 2 - shaft diesels, B.H.P. 110,000 plus 1
shaft geared turbine, S.H.P. 60,000 = 33-1/2
knots.

Radius: 14,000 miles at 19 knots.

Armament: 6 - 15 inch (3X2), 6 - 5.9 inch (3X2),
8 - 4.1 inch AA (4X2), 8 - 37mm AA (4X2),
20 - 20mm AA guns, 4 aircraft.

Complement: 1,900.²²⁸

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