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THE USE OF IOWA CLASS BATTLESHIPS IN AN ECONOMY OF FORCE ROLE AS COMMERCE RAIDERS

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MASTER OF MILITARY ART AND SCIENCE

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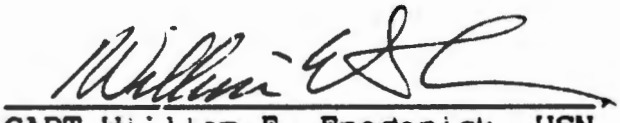

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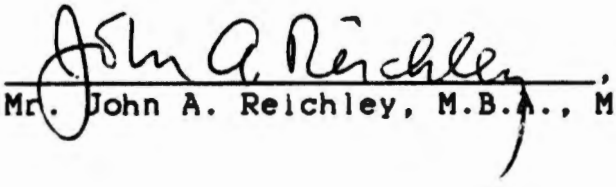

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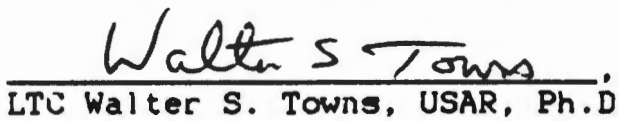

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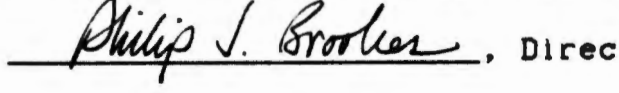

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ABSTRACT

THE USE OF IOWA CLASS BATTLESHIPS IN AN ECONOMY OF FORCE ROLE AS COMMERCE RAIDERS,
by LCDR Wayne A. Walters, USN, 132 pages.

This study analyzes the possibility of using Iowa Class battleships in an economy of force role as commerce raiders. It used the historical example of the German pocket battleship Admiral Graf Spee as a basis for the study. It analyzed the German raider in order to obtain lessons learned which could be applied to a contemporary situation.

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The findings of this study were that it is possible to use an Iowa Class battleship as a commerce raider under a specific set of conditions. It determined also that this may not be the best use of available assets, and suggests the development of a class of ship specifically for commerce warfare.

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CHAPTER 1

INTRODUCTION

On 28 October 1939, the German Naval Staff was evaluating the effectiveness of the panzerschiffe, or pocket battleships, as they were commonly known. Two of these, the Deutschland and Admiral Graf Spee, had been operating in the Atlantic Ocean since late August with the mission of interdicting Allied sea lines of communication. Their mission of sinking enemy merchant shipping was considered successful only to a small degree.[1] However, their secondary objective was being achieved quite effectively and was probably more important than actual merchant ship sinkings. That secondary mission was summed up by the Chief, Naval Staff, in his entry in the War Diary of the German Navy as follows:

> On the other hand, the additional objectives aimed at in using the pocket battleships, namely their indirect effect on the volume of merchant traffic as a whole to the enemy countries, as well as the tying-down of strong enemy forces and their wear and tear have been fully achieved.[2]

The German Navy considered the pocket battleships successful in the war on commerce. This was done with a small force and is an excellent example of the concept of "economy of force."

FM 100-5, Operations describes economy of force as the employment of the minimum means necessary in an area

other than the main effort. It is a tactic that can be used in a situation where resources are limited.[3] This principle not only applies to the Army, for which the field manual was written, but also to the United States Navy. Even though the Navy currently has 597 ships in its active fleet[4], it is a long way from the 1,000 ship navy of the mid 1960s. At the same time, the Navy's worldwide commitments have increased, particularly in Southwest Asia.[5] It is currently operating at an operational tempo 20% higher than during the Vietnam Era.[6] Since resources are not unlimited, a concept such as economy of force must apply to the Navy.

Statement of the Problem

The purpose of this thesis is to determine the feasibility of employing current Iowa Class battleships in an economy of force role as commerce raiders. It will begin by analyzing a historical example of a commerce raider, the Admiral Graf Spee, during the early days of World War II, then draw conclusions about the applicability of such a role today. It will then examine Iowa Class battleships to determine whether or not they could be used in a similar manner.

Background

The United States Navy is currently completing the reactivation of the last of the Iowa Class battleships. They are the largest battleships ever built with the exception of two Japanese battleships, Yamato and Musashi, during World War II. They have a standard displacement of 45,000 tons. The main battery consists of nine 16-inch guns mounted in three turrets, two forward and one aft. The secondary battery consists of either twelve or twenty 5-inch dual-purpose guns depending on the ship. These were designed for use against either light surface ships or aircraft. They also have four Phalanx Close-in Weapon Systems (CIWS) for anti-air and anti-missile protection. The ships have also been fitted with 32 Tomahawk cruise missiles and sixteen Harpoon surface to surface missiles. The armor system is up to 17.5 inches thick in places and is designed to survive combat with a ship armed with 18-inch guns.7

With the growing threat of the Soviet Navy, the United States must look for new and imaginative ways to use its fleets to counter this threat. In order for the United States Navy to meet its worldwide commitments, the possibility exists that one of our battleships may be required to operate away from the main battle group in an economy of force role. This may become necessary in order

to have sufficient forces to interdict an enemy's sea lines of communication in times of conflict.

In a similar manner, the German Navy was faced with the same challenge during World War II. The Treaty of Versailles, signed in June 1919, left Germany with an ineffective navy.[8] The largest warships in the German Navy after World War I were eight obsolete pre-dreadnaught battleships of the Deutschland and Braunschweig classes.[9] According to the treaty, these ships could not be replaced until twenty years after they were launched.[10] Therefore, Germany could begin replacing these ships as early as 1922. However, Germany found it impossible to build modern battleships within the treaty limit of 10,000 tons. In an effort to build effective battleships and still attempt to remain within treaty limits, Germany developed the panzerschiff, or pocket battleship. The Admiral Graf Spee was one of these pocket battleships and was employed as a commerce raider in the opening days of World War II.[11]

Significance

The United States Navy has the largest battleships in the world in its fleet. These are a significant naval weapon, and it is important that the Navy use them, as well as all its other ships, to its best ability. This is

necessary to maximize the warfighting potential of the fleet in order to meet our worldwide commitments.

A commander of a naval vessel has a great degree of freedom in how he chooses to fight his ship. He is given his mission by his superiors, but he is free to use his best judgment in deciding how to carry out those orders. At present, there are no hard and fast doctrinal manuals to which a commander can refer for specific instructions on how to perform a particular task. Rather, he is given guidance in the form of tactical reference manuals which contain basic principles he can use as he desires in performing his mission. This can be a difficult concept for members of other services to comprehend. In the Navy, it would not be easy to evaluate a commanding officer's course of action as to whether or not it was doctrinally correct, especially if it was successful.

Evaluating the possibility of using an Iowa Class battleship as a commerce raider in a peacetime atmosphere may make a wartime decision easier. If this study determines it is possible to use a battleship as a commerce raider, it will also suggest what set of circumstances would be necessary for this to work successfully.

Thesis Objective

The objective of this thesis is to determine whether or not an Iowa Class battleship could be used in an economy of force role as a commerce raider. In order to more fully understand the mission and effect of a commerce raider, the Admiral Graf Spee will be used as a historical example. This study will draw lessons learned from this example and suggest applications in the employment of Iowa Class battleships.

The major terms used in this thesis which require definition or clarification are:

Admiral Graf Spee will be used to refer to the German panzerschiff by that name. Panzerschiff is a German word meaning armored ship, which was also commonly called a pocket battleship.

The names Admiral Graf Spee and Graf Spee will be used interchangeably and will have identical meanings.

Iowa Class refers to the four battleships of which the USS Iowa was the first of her class. The Iowa Class consists of the following ships:

USS Iowa (BB-61)

USS New Jersey (BB-62)

USS Missouri (BB-63)

USS Wisconsin (BB-64)

Economy of force is defined by FM 100-5, Operations as the use of the minimum means necessary when resources are limited in an area other than the main effort.[12] In the context of this thesis, it will refer to deploying an Iowa Class battleship either alone or with the minimum essential number of escort ships.

Commerce raider will refer to a surface warship such as the Admiral Graf Spee which is deployed independently with a mission of sinking enemy merchant shipping. The terms commerce raider, merchant raider, and surface raider will be used interchangeably.

Survey of the Literature

There are numerous accounts in the naval history of World War II where the Admiral Graf Spee is mentioned, especially regarding the Battle of the River Plate. An example is the textbook Seapower, used at the United States Naval Academy for its History of Seapower course. It was written by the faculty with E. B. Potter and Fleet Admiral Chester W. Nimitz as editors. It is an overall history of naval power which contains an excellent discussion of commerce raiding during World War II as well as other major wars. The discussion of the Battle of the River Plate, however, is covered in only four pages, although there is a

large amount of general information on the German Navy. The book also contains an extensive bibliography on the history of seapower. Potter and Nimitz edited another history, The Great Sea War, which has a chapter on Atlantic surface operations. Again, it is a good history, but with an even shorter discussion of the Graf Spee.

Stephen Roskill presents a British naval history of World War II in The War at Sea, 1939-1945. It contains information on pocket battleships and the Battle of the Atlantic. He goes into detail on the war against commerce carried out by the Germans.

There are several primary source documents available for study on the German Navy in general and the Graf Spee in particular. The best source is a translation made by the Navy Department of records captured by Allied forces at Schloss Tambach, Germany, in the Spring of 1945, titled War Diary, Operations Division, German Naval Staff, 1939-45. It is one of the basic sources of naval history of World War II. It is written in the form of a naval log book and contains all important decisions and events which occurred. Another Navy translation is Fuehrer Conferences on Matters Dealing with the German Navy, 1939-1945. Among other things, it contains background information on the decisions concerning the use of pocket battleships.

Another important document is an information bulletin distributed by the U. S. Navy to its officers in 1945. This

was formerly a confidential publication in the form of a "lessons learned" book titled The Battle of the River Plate between the British Cruisers Ajax, Achilles, and Exeter and the German Armored Ship Admiral Graf Spee. It is an excellent after-action report which includes such things as a chronology of the battle, battle damage, casualties, general remarks and conclusions as well as a number of photographs of the units involved. This is the only source of information which goes into any depth on lessons learned from the Battle of the River Plate. As these lessons applied to the Navy then, most are outdated today.

There are several books written specifically on the Battle of the River Plate. They include Battle of the River Plate by Geoffrey Bennett and Graf Spee: The Life and Death of a Raider by Dudley Pope. Bennett's book is relatively short, but contains an excellent description of the battle. It also contains numerous appendices with additional technical information. Pope's book gives more insight into the time spent surface raiding as well as the tactics employed by the captain. However, in both books, there is a lack of lessons learned from both the Battle of the River Plate and the time the ship spent as a surface raider.

Jane's Fighting Ships contains valuable information which was used in the study of the Graf Spee as well as of Iowa Class battleships. The information ranges from material on a specific ship to an overall view of the navies

of the world for that particular year. Jane's Weapons Systems contains a wealth of information on the gun and missile systems of battleships today.

Battleships: Axis and Neutral Battleships in World War II contains a superior discussion of battleships in general. It provides technical information on design considerations, armament, and the armor protection system. Garzke and Dulin co-authored this book as well as Battleships: United States Battleships in World War II. This book provides extensive information on the Iowa Class.

The majority of literature about the Admiral Graf Spee was written relatively soon after the war. There appears to be little written that attempts to evaluate lessons learned and apply them to today's Navy. This is understandable, since for many years the United States Navy has not had any ships of the category of the Admiral Graf Spee.

This has changed in the last several years with the reactivation of Iowa Class battleships. There have been a number of articles published in professional journals sparked by the reactivation of Iowa Class ships . These deal mainly with the naval gunfire role of battleships. There are also articles written on maritime strategy by authors such as the Secretary of the Navy, John Lehman; former Chief of Naval Operations, Admiral James D. Watkins;

and the current Chief of Naval Operations, Admiral Carlisle A. H. Trost.

The Navy Department publication, Understanding Soviet Naval Developments, provides an excellent insight into the Soviet Navy. It covers topics from naval policy to hardware. It includes an in depth discussion on the Soviet Merchant Marine.

Methodology

This study will begin by examining the career of the German pocket battleship, Admiral Graf Spee. It will discuss the reasons behind building pocket battleships, the mission of the Graf Spee during World War II, its effectiveness in that mission, and the impact of the commanding officer on mission accomplishment. It will then evaluate the Battle of the River Plate and the decisions which eventually lead the commanding officer to scuttle his own ship. The emphasis on evaluating the Battle of the River Plate will focus on key decisions and lessons learned instead of the actual mechanics of the battle.

Next, it will examine Iowa Class battleships. It will begin with a discussion of the class including displacement, armor protection, underwater protection system, guns, and missile systems. It will then analyze the capabilities and limitations of these systems and possible

methods to compensate for their limitations. It will also compare the Iowa Class and the Admiral Graf Spee.

This study will take a brief look at international laws that relate to commerce warfare. This will be done to evaluate the possibility of conducting commerce warfare with a battleship in accordance with the law.

Next, this study will examine the maritime strategy of the United States and that of the Soviet Union. This will give an understanding of the objectives and locations of U.S. and Soviet fleets in the event of a global war with the Soviet Union. It will also look at the size, mission, and military value of the Soviet Merchant Marine. Once this is done, the study will then develop a scenario where an Iowa Class battleship could be employed as a commerce raider.

This study has several obvious limitations inherent in attempting to analyze complex events which happened nearly fifty years ago, in particular the career of the Admiral Graf Spee. Research will be limited to accounts either originally written in English or German accounts which have been translated into English.

Another limitation to this study is the difference in the size of the Graf Spee compared to Iowa Class battleships. With the exception of Iowa Class battleships and aircraft carriers, there is only one other ship, the USS Long Beach (CGN-6), which is larger than the Admiral Graf

Spee in the active fleet of the United States Navy today.[13] The Graf Spee was among the largest ships in the German Navy in its time. Only two other battleships, both of the Scharnhorst Class, were larger.[14] With that in mind, the Admiral Graf Spee and Iowa Class battleships have many similarities. These include relative displacement, armor protection, and firepower when viewed in relation to the rest of their respective fleets.

In order to keep a study of this magnitude to a workable size, certain delimitations have been placed on it. This study will not consider any period prior to the end of World War I. Except where specifically stated, the Iowa Class will be considered only in the configuration in which the ships exist today or will exist at the completion of their reactivation, whichever is later.

All research will be conducted using unclassified sources. This will limit research to a degree since some information on specific weapons systems is classified. Also, unclassified information on Soviet ships and weapons systems is generally not as readily available as information on United States ships and weapons systems. However, most information relevant to this study can be found in unclassified sources. This unclassified information will be satisfactory for the purposes for which it will be used in this study.

Finally, this study will consider only one historical example of a surface raider, the Admiral Graf Spee. This has been done to limit the scope of the study and is not anticipated to adversely affect the outcome of this study since the ultimate research question concerns Iowa Class battleships as they exist today.

NOTES

[1]War Diary, Operations Division, German Naval Staff, 1939-45. Trans. U. S. Navy Dept. (Wilmington: Scholarly Resources, 1984), 28 Oct. 1939.

[2]War Diary, 28 Oct. 1939.

[3]U. S. Department of the Army. Field Manual (FM) 100-5, Operations. (Washington: Department of the Army, 1986), p. 174-75.

[4]John Moore, ed., Janes Fighting Ships, 1985-86. (London: Jane's Publishing Company Limited, 1985), p. 657.

[5]Casper W. Weinberger, Annual Report to the Congress Fiscal Year 1987. (Washington: Department of Defense, 1986), p. 175.

[6]James D. Watkins. "The Maritime Strategy." U. S. Naval Institute Proceedings, (Jan. 1986 Maritime Strategy Supplement), pp. 5-6.

[7]Moore, pp. 694-95.

[8]Geoffrey Bennett, Battle of the River Plate. (Annapolis: U. S. Naval Institute, 1972), p. 11-12.

[9]Fred T. Jane. Fighting Ships. (London: Sampson Low, Marston & Co., Ltd., 1914), pp. 125-26.

[10]Fred L. Israel, ed. Major Peace Treaties of Modern History, 1648-1967. (New York: Chelsea House Publishers, 1967), p. 1376.

[11]Bennett, pp. 11-12.

[12]FM 100-5, p. 174-75.

[13]Moore, p. 700.

[14]Francis E. McMurtrie, ed. Jane's Fighting Ships, 1939. (London: Sampson Low, Marston & Co., Ltd., 1939), p. 222.

CHAPTER 2

ADMIRAL GRAF SPEE -- THE COMMERCE RAIDER

Background -- Treaty of Versailles Limitations

The Treaty of Versailles, signed 28 June 1919, officially ended World War I. Although the fighting ended with the Armistace of 11 November 1918, the actual terms of peace were not established until the signing of the treaty. The treaty contained several articles that had a significant impact on the German Navy after the war.

Article 181 severely reduced the size of the German Navy. It limited the navy to six battleships of the Deutschland or Lothringen type[1], six light cruisers, twelve destroyers, and twelve torpedo boats. Unless otherwise specified in the treaty, ships in excess of these limits were to be placed in reserve or devoted to commercial purposes. It also banned submarines from the navy.[2] Articles 184 to 188 called for specific warships to be surrendered or, if under construction, destroyed.[3] All this was to be completed within two months of the treaty signing.

Some of the most far reaching effects of the treaty were the restrictions placed on new construction. Article 190 forbade the construction or acquisition of any warship not intended to replace ships already in commission as provided for by Article 181. The following limitations were

placed on replacement warships: armored ships, 10,000 tons; light cruisers, 6,000 tons; destroyers, 800 tons, torpedo boats, 200 tons. The article also specified that unless a ship was lost, the existing fleet could not be replaced until twenty years from the date of launching for battleships and cruisers and fifteen years for destroyers and torpedo boats.4

The Deutschland and Braunschweig Class battleships which remained in the German Navy were of the pre-dreadnaught type. Pre-dreadnaught refers to battleships either designed or constructed before the British commissioned the secretly constructed H.M.S. Dreadnaught in 1906. The Dreadnaught was described as the first "all-big-gun" battleship. It had ten 12-inch guns mounted in five turrets which gave her an effective main battery firepower of 2 1/2 times that of any ship in existence at that time. She proved to be the archetype of all subsequent battleships. The major naval powers all recognized the superiority of the design and either scrapped or modified existing building plans in order to begin building "dreadnaughts." The dreadnaughts rendered all earlier battleships obsolete.5

The Deutschland and Braunschweig Class battleships consisted of a total of nine ships which were completed between 1904 and 1908. They each had a displacement of 13,200 tons. Their armament consisted of a main battery of

four 11-inch guns, an intermediate battery of fourteen 6.7-inch guns, and a secondary battery of twenty 24-pounder guns. They were coal burning and could obtain a maximum speed of approximately 18-19 knots.[6] The 1914 edition of Fighting Ships describes these ships as follows:

> These ships of the Deutschland class are over-gunned. The secondary guns fire too heavy a projectile for man-handling, and the actual value of the class is well below their paper valve. They are very good steamers; but otherwise hardly equal to British, U.S.A., and French ships of equal date.[7]

These ships, even in their day, were considered to be inferior. In the age of dreadnaughts, they were obsolete.

These obsolete ships were the backbone of the post-war German Navy. In 1919, however, they were anything but warships. Eight of the nine had been disarmed and the guns had been removed from six of them. The guns on the other two had been rendered inoperable. The largest armament on the one remaining armed ship was only six 4.1-inch guns.[8] By 1924, most had been rearmed, several with smaller guns, but only two were in commission, with six in reserve.[9]

The Need for Pocket Battleships

According to the treaty, these ships could not be replaced until twenty years after they were launched.[10] The oldest of these ships, Braunschweig, was launched in December 1902.[11] Germany could begin replacing them as

early as 1922. However, Germany found it impossible to build modern battleships within the treaty limit of 10,000 tons.[12]

A 1923 study showed that it was possible to build a 10,000 ton ship with 15-inch guns; however, it would require a sacrifice in speed, endurance, and armor protection. The significance of this report was that capital ships were possible under current limitations, but on a smaller scale. Design work continued until 1925 and resulted in several possible alternative designs.[13]

Design Considerations

The main design consideration in the building of capital ships was the 10,000 ton limitation imposed by the Treaty of Versailles. Within this constraint, there were several possible combinations of armament, speed, and armor protection. The armament varied from four 15-inch twin to six 12-inch twin or six 11-inch twin guns for the main batteries. Armor protection considerations ranged from 3.94 to 9.84 inches. Finally, speed was inversely proportional to a combination of the above items. The design considerations for speed were 18, 21, or 27 knots.[14]

The final decision was a compromise of these considerations. It consisted of a ship with heavy armament and light armor protection. The armament would be able to

defeat any heavy cruiser either in existence or proposed at that time. The high speed would be faster than any battleship in the world with the exception of the British battleships. The Germans, however, did not consider the British a serious enemy at that time.[15]

The Deutschland Class armored ships (pocket battleships) were the result of these design studies. The class consisted of three ships: Deutschland, Admiral Scheer, and Admiral Graf Spee.[16] These three ships were essentially the same with only minor differences in design.

Description of the Admiral Graf Spee

The Admiral Graf Spee was built by the Wilhelmshaven Navy Yard, Germany. Construction began 1 October 1932 with the laying of the keel. She was launched less than two years later on 30 June 1934. Work on the ship continued and the Admiral Graf Spee was commissioned 6 January 1936.[17] She had an overall length of 609 3/4 feet, a beam of 67 1/2 feet, and a draft of 21 2/3 feet. She had a complement of 926 officers and men.[18]

Displacement

Pocket battleships were limited to a standard displacement of 10,000 tons as mentioned earlier. Standard displacement is defined as the weight of water a ship

displaces when floating freely. This is based on the weight of salt water at 64 pounds per cubic foot, and uses the English long ton (2240 pounds) as the standard of measurement.[19] Standard displacement is further defined as the displacement of a ship that is fully manned, equipped, and ready for sea. This includes ammunition, provisions, fresh water for the crew, and any other store or implement to be carried in war. It does not include fuel or reserve feed water for the boilers.[20]

The 1939 issue of Jane's Fighting Ships suggests the builders were abiding by the displacement limitations. Further study has revealed that this was not the case. The actual displacement of the Admiral Graf Spee was 11,785 tons.[21] There appear to be several reasons for this violation.

To begin with, the Treaty of Versailles did not specifically state the type of displacement to be used, but merely stated the maximum.[22] It can be assumed that it was referring to "standard displacement;" however, there are other measurements such as "light," and "full load" displacement which are also used when determining the displacement of a ship. Geoffrey Bennett, in Battle of the River Plate, describes the Graf Spee as having a "nominal" displacement of 10,000 tons, with a standard displacement of 12,100 tons.[23] He does not, however, define what he means by nominal displacement. The Germans could therefore

use a certain amount of discretion in calculating the displacement of these ships.

Another factor was a difference in the method of measuring displacement. The Germans determined displacements by using the specific gravity of salt water in the Baltic Sea. This gives a weight of 63.336 pounds per cubic foot instead of the standard of 64 pounds per cubic foot used by the Americans and the British.[24]

Speed

The Graf Spee had a top speed of 28.5 knots.[25] She had eight sets of M.A.N. Diesel engines with two shafts, which developed a total of 54,000 horsepower. She carried 1,200 tons of fuel which gave her a cruising radius of 10,000 miles at 15 knots.[26]

Guns

The main armament consisted of six 11-inch guns mounted three per turret with one turret forward and one aft. The secondary battery consisted of eight 5.9-inch guns, with four amidship on each side. Anti-aircraft protection was provided by six 4.1-inch and eight three pounder guns. In addition, the ship had 10 machine guns and eight 21-inch torpedo tubes. It was also equipped with two aircraft catapults for scout planes.[27]

Armor Protection

Details of the armor protection system are inconsistant among the various sources. William H. Garzke, in his book Battleships: Neutral and Axis Battleships in World War II, provides only sketchy information.[28] However, he has a very extensive discussion on armor protection in battleships.[29] This will give an interested reader a much better appreciation of the effects of armor against guns, bombs, and torpedoes. The 1939 issue of Jane's Fighting Ships describes the side belts and deck armor in more detail, but with slightly different numbers. The most in depth discussion of the armor protection system was found in a declassified (formerly confidential) Department of the Navy publication distributed only a few months after the Battle of the River Plate. Its purpose was to distribute information of general interest to the United States Navy in the form of lessons learned. This publication lists the major armor protection as follows:

> 4-inch water-line belt tapering to about 2 inches fore and aft and extending from just forward of No. 1 barbette to just abaft No. 2 barbette;
>
> 1-inch main deck and 1 1/2-inch second deck increased to about 3 inches over vitals;
>
> 2-inch longitudinal torpedo bulkhead behind the bulge abreast of magazine and machinery spaces;

3-inch to 4-inch athwartship bulkheads (approximate);

7-inch turret face plate, 5-inch to 3-inch top, 2-inch sides, sliding shields seal gun ports, reported to have dividing bulkheads between guns but no turret officer's booth;

4-inch barbettes;

5-inch conning tower with a 2-inch top;

1-inch bulwark to forward end of open bridge;[30]

The publication then goes into some of the smaller areas protected by armor. The ship was also equipped with external bulges below the waterline as part of the underwater protection system against torpedoes.[31]

At first sight, this may appear to be impressive, and it is when compared to armor on warships today. Traditionally, battleship armor has been designed to withstand attack by guns of equal caliber as the main battery on the ship.[32] This then would indicate that a pocket battleship would be able to withstand attack by another ship with 11-inch guns. This was probably not the case, as was later demonstrated at the Battle of the River Plate. Garzke describes the armor as only marginally effective against the 8-inch guns of the HMS Exeter at the Battle of the River Plate.[33] It should be noted, however, that the armor deck and side belts had not been penetrated during the battle with either 6-inch or 8-inch shells.[34]

Mission at the Outbreak of World War II

The German plan was to sail the pocket battleships and their supply ships secretly before the outbreak of hostilities. Supply ships would enable them to remain at sea for many months before they would have to attempt a breakthrough back into German waters. Their mission was "...the disruption and destruction of enemy merchant shipping by all possible means."[35] They were to make sudden appearances in widely scattered areas and then disappear into the vast ocean. Their orders strictly forbade them to seek out even inferior enemy warships. This was to avoid any damage, even slight, that might impair their capabilities or endurance and force them to return prematurely to Germany.[36]

On 15 August 1939, in anticipation of the invasion of Poland on 1 September, the pocket battleships Deutschland and Admiral Graf Spee were ordered to make ready for departure. The Graf Spee was to operate in the South Atlantic and the Deutschland in the North Atlantic.[37] At 2100, 21 August 1939, the Admiral Graf Spee departed Wilhelmshaven, Germany.[38] She and her supply ship, Altmark, were ordered to an area southwest of the Canary Islands where they were to await further orders.[39] The Deutschland followed at 1500, 24 August 1939.[40] Complete secrecy regarding the deployment of these ships was maintained.[41]

By doing this prior to the outbreak of hostilities, it was possible to get the ships into the Atlantic unopposed. If the Germans had waited until after the outbreak of war, this may have been a more difficult task.

On the eve of the German invasion of Poland, the German Navy received its orders from the Armed Forces High Command. It was not to commit any warlike actions at sea since the responsibility for starting hostilities in the West was left to Great Britain and France. Should hostilities occur, the German Navy was to act only in self-defense. It was ordered, however, to prepare to conduct war against merchant shipping with the focus of its efforts against Great Britain.[42]

War began at 0445, 1 September 1939, when Germany invaded Poland. Great Britain and France both had mutual defense treaties with Poland, although Hitler did not expect either country to honor them. Britain, however, issued Germany an ultimatum during the evening of 1 September 1939 and a final warning at 0900, 3 September 1939, which Hitler chose to ignore. British Prime Minister Chamberlain announced at 1115, 3 September 1939, that Great Britain had declared war with Germany. France followed with a declaration of war that afternoon.[43]

That same day the German Navy began the war against commerce. At 1400, a message was sent to Atlantic submarines to commence the commerce war against merchant

shipping in accordance with prize regulations.[44] Although the pocket battleships were at sea, it appears that this message did not specifically apply to them. Their orders were clarified two days later: They were to break off operations and withdraw from the operating area to either "Northern Waters, Southern Atlantic, or the Indian Ocean."[45] The reason for this is summed up by the Commander in Chief, Navy, in his views that he presented to the Fuehrer during a conference on 7 September 1939:

> a. Great Britain is unable to draw France into the War unconditionally.
> b. France fails to see any war aim and is therefore trying to stay out of the war.
> c. After the collapse of Poland, which can be expected soon, it is possible that France and perhaps afterwards Great Britain might be ready to accept to a certain extent the situation which has been created in the meantime in the East.
> d. Therefore an attack should not be forced and our strength should be saved for the time being.[46]

The Fuehrer agreed with this view and the decision to withdraw the pocket battleships.[47]

This restriction on pocket battleships lasted until 26 September 1939 when they received orders to begin commerce raiding. There were three reasons for this change: The restrictions on commerce war against France had been removed by the Fuehrer; there was news of large scale movement of enemy merchant shipping by convoys which presented the prospect of valuable targets to the pocket battleships; British battle cruisers and French battleships,

which were the main threat to the pocket battleships, were reported to be in their home waters.[48]

Altmark -- Supply Ship for Admiral Graf Spee

The Altmark, supply ship for the Admiral Graf Spee, left Germany on 5 August 1939 and headed to the United States to take on diesel oil at Port Arthur, Texas.[49] She left Port Arthur on 20 August 1939 for her return passage towards Germany. She intentionally remained south of the shipping lanes in order not to give away her position.[50]

On 1 September 1939 the Altmark joined the Admiral Graf Spee. The tasks of the Altmark and Graf Spee were very nicely summed up by Altmark's commanding officer, Captain Heinrich Dau, when he addressed his crew with the following statement:

> The task which the Fuehrer has selected for us is to act as an indispensible, floating supply base for a German battleship which is going to make the high seas dangerous, nay, deadly for the enemy. We must not relax our preparedness. A few hefty blows at the British Empire just may bring them to their senses. We are part of the instrument which can strike this blow. Victory in Poland will be followed by the hammer blows of the Graf Spee--Seig Heil![51]

While the captain may have been overestimating the importance of the two ships to the war effort, he was basically correct about the potential of a powerful commerce raider.

Logistics are vital to any military operation, and ships at sea are no exception. The Altmark provided the necessary provisions, spare parts, and oil to the Graf Spee. However, there was one critical supply that she did not have: ammunition.[52] None of the sources addressed the reason for this shortcoming in logistical support. This was a critical factor in the decisions made during the Battle of the River Plate and at Montevideo.

Tactics as a Surface Raider

During the period 26 September 1939 to 13 December 1939, the Admiral Graf Spee sank nine merchant ships.[53] During this time she was able to act as a commerce raider. In order to gain a better understanding of the tactics employed, this study will look at one merchant sinking as an example. Although all of the actions were unique in their own way, they are also very similar in the tactics employed.

The first merchant ship sinking by the Graf Spee occurred on 30 September 1939. It was the S. S. Clement, sunk 120 miles southeast of Pernambuco, Brazil.[54] The Clement was a 5,050 ton British steamer near the end of her voyage from New York to Bahia, Salvador. She carried a cargo of 20,000 cases of kerosene. At 1115, the Third Officer, H. J. Gill, reported to the Captain, F. C. P. Harris, that he had sighted a battleship. The captain

replied "I expect that is the Ajax," which he knew was operating in the area.[55] This proved to be a very costly assumption for the captain. There were several other occasions when the Graf Spee's victim was not able to correctly identify her attacker until it was too late to even successfully get out a distress signal.

The Graf Spee used one of its airplanes to take a closer look at the Clement.[56] This was probably done for two reasons. First, it would be the best way to identify the ship or, more importantly, the nationality of the ship. The reasons for this are obvious. It is neither politically nor militarily effective to sink a neutral or friendly ship. Secondly, it would enable the Graf Spee to more accurately determine if the ship were armed, which would have a bearing on the tactics used.

It is not clear what happened next. According to both Dudley Pope[57] and Geoffrey Bennett[58], the plane opened fire, which caused the ship to send out a distress call. The War Diary does not agree with this. The message Captain Langsdorff sent to the Naval Staff stated "As the steamer made use of her radio she was machine-gunned by the ship's plane."[59] Based on other actions by the commanding officer in this and other operations against merchant ships, his account is probably true.

The captain of the Clement stopped his ship and ordered his men to man the life boats. He threw his

confidential books over the side in specially weighted bags. The radio operator reported that the distress signal was picked up by a Brazilian steamer. This distress signal, as usual, included the position of the ship and the nature of the distress: a pocket battleship.[60] This is significant not only for the rescue of the crew but, more importantly, it would let the British know the location of the Graf Spee. This would no longer be a safe area in which the ship could operate.

The Graf Spee launched one of its boats and sent a boarding party to the Clement. On the bow of the launch was painted the false name, Admiral Scheer. The boat's crew also wore cap bands on their hats with the false name on them.[61] This was done in an effort to conceal the true identity of the raider. Captain Langsdorff's intentions were to release the crew unharmed and he did not want them to be able to correctly identify his ship. This deception worked well; when the crewmen were rescued they reported their ship had been sunk by the Admiral Scheer.[62] Captain Langsdorff constantly changed the name of his ship to either Deutschland or Admiral Scheer to confuse British intelligence. He also used the French flag to close on his prey without alerting it as to his identity or intentions.[63] It appears that the true identity of the Graf Spee remained in doubt until the Battle of the River Plate.[64]

When the crew was safely in the boats, Captain Langsdorff sank the S.S. Clement with gunfire. He took Harris and his chief engineer on board the Graf Spee. He wanted to question Harris and have a wound on the chief engineer's hand treated. Since the sea was calm, the rest of the crew, in life boats, was given the course to steer for the South American coast less than 120 miles away. One boat was soon picked up by the Brazilian steamer S.S. Itatinga, and landed in Macelo, Brazil, the next day. The following day, the remaining boats arrived at the same port.[65] This is the only time that the crew of one of the Graf Spee's victims was left in life boats, and it should be noted that its safety was not in question. Generally, the crew was taken on board the Graf Spee and transferred to the Altmark when convenient. The captains, first officers, radio officers, and chief engineers would remain on the Graf Spee with the intention of being taken back to Germany.[66] On 26 November 1939, Captain Langsdorff ordered the Altmark to land her prisoners in a neutral port. The commanding officer of the Altmark, Captain Dau, ignored this order since he felt that showing his ship in a neutral port would endanger his chances of a safe return to Germany.[67]

The treatment of the captain and chief engineer of the Clement is worth noting. They were escorted to the bridge where they met Captain Langsdorff. In a later interview, Harris said: "When there, we met the Captain

[Langsdorff] and ten officers. He saluted me and said 'I am sorry, Captain, I will have to sink your ship. It is war.'"[68] Chairs were brought to the bridge so the guests could watch the sinking of the Clement. This is very significant since traditionally only the captain and possibly the navigator are permitted to sit on the bridge of a warship. They were treated well and some of the German officers who could speak English explained what was going on as the Clement was being fired at.[69]

After the Clement was sunk, Langsdorff said to Harris, "If you will give me your word and not to attempt any espionage, and do exactly as we tell you, you will be left free. Otherwise, I will have to put a guard on you."[70] Harris gave the captain his word that neither he nor his engineer would attempt anything. Captain Langsdorff's response was: "All right, shake hands."[71] As it turned out, they were only on board a few nours when the Graf Spee encountered a passing Greek steamer, the S.S. Papelemos. After Captain Harris agreed not to make any wireless telegraphy (W/T) reports, the British were transfered to the steamer via one of the Graf Spee's boats. Harris kept his promise until nine days later, 9 October, when he reached St Vincent in the Cape Verde Islands.[72]

It appears that Captain Langsdorff had a true concern for the safety of the crew, as shown by the fact that he sent a message to Olinda, the radio station at Pernambuco,

Brazil. He used the call sign DTAR, which was the call sign of the Admiral Scheer. The message was: "Please save the lifeboats of the Clement. 0945 south, 3404 west."[73] The reply he received was "Thanks. O.K. Hasta Luego."[74]

Captain Langsdorff -- the Naval Officer

In order to gain a more complete understanding of the tactics employed by the Graf Spee, it will be necessary to examine the personality and professionalism of Captain Langsdorff. On 23 September 1939, Hitler began ignoring international law concerning commerce warfare, and finally lifted all restrictions by November 1939.[75] This meant that Captain Langsdorff was under no obligation by his superiors to conduct his operations in accordance with international law. As a true professional, he chose to continue fighting in accordance with international law as well as any moral convictions he may have had. The personality of Captain Langsdorff played a major part in the conduct of the Graf Spee's mission. He could have conducted his job in a ruthless manner; however, he chose to conduct himself as a true professional. He appears to have been a honorable man and expected the same from other men in his position. This attitude is evident from the treatment of the captain of the Clement. There are several other areas which need to be mentioned in this respect.

An incident occurred after the sinking of the S.S. Tairoa on 3 December 1939. Shortly before daybreak, the Graf Spee was able to approach her next target unnoticed. After warning the Tairoa not to transmit a distress signal or she would be fired upon, the radio operator began a valiant effort to send a distress signal. The crew was already beginning to abandon ship when the Graf Spee opened fire with her 3.7-cm (3-pounder) guns on the bridge to stop the transmission.[76] The Graf Spee's log entry pays tribute to this man's heroic efforts. "The first 3.7-cm shells hit the chart house and radio cabin. At the end the radio operator was lying on the deck attempting to transmit his report until finally shrapnel [sic] put the transmitter out of order."[77] Three men were wounded by shrapnel in this incident and they were brought on board the Graf Spee for medical treatment. A couple of hours later, Captain Langsdorff took time to visit them in sick bay. He apologized to the men for having wounded them. He said "We do not make war on civilians, but you use your telefunkin, so I have to open fire."[78]

Another incident occurred during what is known as the Chase Phase of the Battle of the River Plate. It is best summed up by the Graf Spee's log entry.

> While steering towards La Plata a large 5,000-ton English steamer was ordered to stop with a warning shot and to send the crew into the boats. The Captain had the intention of torpedoing the steamer if the crew left the ship. He radioed a message to

> the Ajax. Since the crew of the steamer did not leave the ship, the Captain abandoned his intention of sinking the ship in view of the possible reception of his own crew in Montevideo.[79]

The steamer was the S.S. Shakespeare.[80] If Langsdorff had sunk the steamer there may have been a good chance that one of the two British ships chasing him, the Ajax or Achilles, would have stopped to pick up survivors. With the Exeter already out of the action at this point, this would have separated the two ships, giving him the advantage of attacking each alone or possibly having them both discontinue the chase. He chose, however, not to sink a merchant ship with her crew still on board. He even went one step further by sending a distress signal to the Ajax for his intended victim. Although this may have made a difference in the battle, he stood by his conviction not to make war on civilians.

The most commendable of all feats achieved by Captain Langsdorff is in the collective sinking of his nine victims. He was able to do this without the loss of a single life.[81] There are probably very few naval officers, if any, who could make such a claim. He would ensure that the crews were removed from a ship before it was sunk. The crews would normally be taken on board the Graf Spee and eventually transferred to her supply ship, Altmark, with the intention of being released later in a neutral port.

Merchant Ships Sunk

The Admiral Graf Spee received instructions to resume merchant raiding operations on 26 September 1939 after a three week moratorium.[82] From that time until the Battle of the River Plate, she sank nine merchant ships with a total tonnage of 50,089 tons. A list of the ships follows:[83]

Name	Gross tons	Date sunk
Clement	5051	30 Sept 1939
Newton Beach	4651	9 Oct 1939
Ashlea	4222	7 Oct 1939
Huntsman	8196	17 Oct 1939
Trevanion	5299	22 Oct 1939
Africa Shell	706	15 Nov 1939
Doric Star	10086	2 Dec 1939
Tairoa	7983	3 Dec 1939
Streonshalh	3895	7 Dec 1939

It is important to look at the total effect of a merchant raider when examining its effectiveness, not just the number of ships sunk. The ultimate mission of pocket battleships was to prevent enemy merchant ships from delivering their supplies. If merchant ships failed to sail due to this threat, the sea lines of communications had in fact been interdicted. This is exactly what the Admiral Graf Spee had accomplished.

This was accomplished as a team effort with the Deutschland as well as the submarine force. One week after the invasion of Poland the Commander in Chief, Navy, discussed merchant warfare with the Fuehrer. The decision was made to have the pocket battleships temporarily withdraw

from the battle. The main reason for this was that "...it seems that the British trade is being stopped and British naval forces are being sent on planned attacks against German merchant raiders."[84] They had made their mark in a very short time.

Another important result of commerce warfare is the resulting commitment of strong enemy forces and the added wear and tear on his ships. The Admiral Graf Spee effectively achieved this result. The British and French eventually committed 29 warships protecting the Atlantic shipping lanes from the raiders and attempting to hunt them down. This force consisted of four battleships, four battle cruisers, six aircraft carriers, and twenty cruisers. Sixteen of these ships had to be diverted from other duties.[85]

It was a difficult task to hunt down surface raiders since they were constantly attempting to avoid detection. The only real information as to their location were the Mayday reports sent out by wireless. The British Admiralty was aware of this and issued instructions to its merchant ships to ensure that reports were sent out as soon as an enemy raider was detected. The Germans immediately became aware of this system and took steps to prevent the sending of a distress signal by threatening to immediately sink the ship if a message was sent. In spite of this, many a

merchant ship's radioman did manage to send distress signals at great risk to his crew.[86]

Allied Warships Involved in the Search

As mentioned earlier, there were 29 Allied warships involved in the search for the Graf Spee and the Deutschland. The size of the force demonstrated the threat these German ships were to the war effort; they could not be ignored. The British and French warships involved in the search are listed below:[87]

Force Name	Composition	Type Ship	Area of Operations	Diverted from
F	Berwick	8" cruiser	North America	Halifax
	York	8" Cruiser	and West Indies	Halifax
G	Exeter	8" cruiser	Southeast coast	South
	Cumberland	8" cruiser	of South	Atlantic
	Ajax	6" cruiser	America	New Zealand
	Achilles	6" cruiser		-
H	Shropshire	8" cruiser	Cape of	Mediter-
	Sussex	8" cruiser	Good Hope	ranean Sea
I	Eagle	A/C carrier	Ceylon	China
	Cornwall	8" cruiser		China
	Dorsetshire	8" cruiser		China
K	Renown	Battle-cruiser	Pernambuco	Home Fleet
	Ark Royal	A/C carrier		Home Fleet
L	Dunkerque	Battle-cruiser	Brest	-
	Bearn	A/C carrier		-
	Glorie (Fr)	6" cruiser		-
	Montcalm	6" cruiser		-
	Georges (Fr)			
	Leygues (Fr)	6" cruiser		-

M	Dupleix (Fr)	8" cruiser	Dakar	Mediter-ranean Sea
	Foch (Fr)	8" cruiser		
N	Strasbourg	Battle-cruiser	West Indies	Brest
	Hermes	A/C carrier		Plymouth

It should be noted that of the 29 warships, 16 were diverted from other areas of operations, therefore adding to the disruptive effect of pocket battleships.

It is important to note that warships were not only tied up in the search for pocket battleships, but additional ships were required to protect convoys headed to Europe. In addition to the hunting groups listed above, the British Admiralty sent seven destroyers to Halifax to escort homeward-bound Atlantic convoys. These ships were the Resolution, Revenge, Enterprise, Emerald, Repulse, Furious, and Warspite.[88]

Force G

The hunting group that eventually found and fought the Graf Spee was Force G, the South American Division under the command of Commodore Henry Harwood. It located the Graf Spee on 13 December 1939 in the approaches to the River Plate. This force consisted of the 8-inch cruiser, H.M.S. Exeter and two 6-inch cruisers, the H.M.S. Ajax and H.M.N.Z.S. Achilles. The fourth ship of the hunting group,

the 8-inch cruiser H.M.S. Cumberland, was refitting in the Falklands and did not participate in the action.[89]

The largest of the British ships, Exeter, was launched 18 July 1929. She had a standard displacement of 8390 tons and an overall length of 575 feet. Her crew consisted of 600 officers and men. Her main armament was six 8-inch guns mounted in three turrets, two forward and one aft. She was also equipped with six 21-inch torpedo tubes and two aircraft catapults. Her top speed was 32 knots. Her armor protection consisted of two to three inches of side armor amidships, two inches of deck armor, and three inches of armor on the conning tower.[90]

The Ajax and Achilles were of the smaller Leander Class. The Ajax was launched 1 September 1932 and the Achilles 1 March 1934. They had a standard displacement of 6,985 tons for the Ajax and 7,030 for the Achilles and an overall length of 554.5 feet. They each had a crew of 550 officers and men. Their main armament consisted of eight 6-inch guns mounted in twin turrets with two turrets both forward and aft. They were also equipped with eight 21-inch torpedo tubes. The Ajax had one aircraft catapult, the Achilles two. Both ships had a top speed of 32.5 knots and were lightly armored with two to four inches of side armor amidships, two inches of deck armor, and one inch of armor on the turrets and bridge.[91]

These three ships were all considerably smaller and less powerfull than the Graf Spee. Their speed, and particularly their combined firepower, were important factors which Commodore Harwood exploited at the Battle of the River Plate.

NOTES

[1]The Lothringen is of the Braunschweig Class. The treaty incorrectly identified the class of ship, however, this did not change the intent of the treaty.

[2]Fred L. Israel, ed. Major Peace Treaties of Modern History, 1648-1967. (New York: Chelsea House Publishers, 1967), p. 1373.

[3]Israel, pp. 1374-76.

[4]Israel, p. 1376.

[5]E. B. Potter and Chester W. Nimitz, ed. Seapower. (Englewood Cliffs: Prentice-Hall Inc., 1960), pp. 388-89.

[6]Fred T. Jane. Fighting Ships. (London: Sampson Low, Marston & Co., Ltd., 1914), pp. 125-26.

[7]Jane, p. 125.

[8]O. Parkes and Maurice Prendergast, ed. Jane's Fighting Ships, 1919. (London: Sampson Low, Marston & Co., Ltd., 1919), p. 519.

[9]Oscar Parkes and Francis E. McMurtrie, ed. Jane's Fighting Ships, 1924. (London: Sampson Low, Marston & Co., Ltd., 1924), p. 194.

[10]Israel, p. 1376.

[11]Jane, pp. 125-26.

[12]Geoffrey Bennett, Battle of the River Plate. (Annapolis: U. S. Naval Institute, 1972), pp. 11-12.

[13]William H. Garzke and Robert O. Dulin Jr. Battleships: Axis and Neutral Battleships in World War II. (Annapolis: Naval Institute Press, 1985), p. 6.

[14]Garzke, p. 6.

[15]Garzke, p. 6.

[16]Francis E. McMurtrie, ed. Jane's Fighting Ships, 1939. (London: Sampson Low, Marston & Co., Ltd., 1939), p. 223.

[17]Navy Department. The Battle of the River Plate between the British Cruisers Ajax, Achilles, and Exeter and the German Armored Ship Admiral Graf Spee. (Washington: U. S. Government Printing Office, 1940), p. 1.

[18]McMurtrie, p. 223.

[19]Thomas C. Gillmer. Modern Ship Design. (Annapolis: United States Naval Institute, 1970), p. 32.

[20]Garzke, p. 5.

[21]Garzke, p. 7.

[22]Israel, p. 1376.

[23]Bennett, p. 72.

[24]Garzke, p. 7

[25]Garzke, p. 7.

[26]McMurtrie, p. 223.

[27]McMurtrie, p. 223.

[28]Garzke, p. 7.

[29]Garzke, pp. 19-36.

[30]Navy Department, p. 2.

[31]McMurtrie, p. 223.

[32]Garzke, p. 19.

[33]Garzke, p. 7.

[34]Navy Department, pp. 34-44.

[35]Stephen Wentworth Roskill. The War at Sea, 1939-1945. Vol. 1. (London: H. M. Stationary Office, 1954), p. 112.

[36]Roskill, p. 112.

[37]War Diary, Operations Division, German Naval Staff, 1939-45. Trans. U. S. Navy Dept. (Wilmington: Scholarly Resources, 1984), 15 August 1939.

[38]War Diary, 1900, 21 August 1939.

[39]War Diary, 23 August 1939.

[40]War Diary, 1500, 24 August 1939.

[41]Roskill, p. 58.

[42]War Diary, 1240, 31 August 1939.

[43]Potter, Seapower., p. 491.

[44]War Diary, 1400, 3 September 1939.

[45]War Diary, 1300, 5 September 1939.

[46]Fuehrer Conferences on Matters Dealing with the German Navy, 1939-1945. Trans. U. S. Navy Dept. (Washington: University Publications of America, 1977), 7 September 1939.

[47]Fuehrer Conferences., 7 September 1939.

[48]War Diary, 1100,26 September 1939.

[49]War Diary, 15 August 1939.

[50]War Diary, 20 August 1939.

[51]Carmen S. Cambareri. "Scuttle the Graf Spee." U. S. Naval Institute Proceedings, (June 1983), p. 51.

[52]War Diary, 15 August 1939.

[53]Bennett, p. 89.

[54]War Diary, 30 September 1939.

[55]Dudley Pope, Graf Spee: The Life and Death of a Raider. (Philadelphia: Lippencott, 1957), p. 66.

[56]Pope, p. 66.

[57]Pope, p. 66.

[58]Bennett, p. 24.

[59]War Diary, 30 September 1939.

[60]Pope, p. 67.

[61]Pope, p. 67.

[62]Roskill, p. 113.

[63]Bennett, p. 27.

[64]Roskill, p. 136.

[65]Bennett, p. 24.

[66]Bennett, p. 27.

[67]Bennett, p. 53.

[68]Pope, p. 68.

[69]Pope, p. 68.

[70]Pope, pp. 68-69.

[71]Pope, p. 69.

[72]Bennett, p. 24.

[73]Pope, p. 69.

[74]Pope, p. 69.

[75]Donald G. MacIntyre. The Battle of the Atlantic. (New York: The MacMillan Company, 1961), p. 31.

[76]Pope, pp. 113-14.

[77]Pope, p. 114.

[78]Pope, pp. 114-15.

[79]Pope, pp. 195-96.

[80]Pope, p. 195.

[81]Bennett, p. 24.

[82]War Diary, 1100, 26 September 1939.

[83]Bennett, p. 89.

[84]Fuehrer Conferences., 7 September 1939.

[85]Pope, p. 30.

[86]Roskill, p. 114.

[87]Bennett, pp. 66-67 and Roskill, p. 114.

[88]Roskill, p. 114.

[89]E. B. Potter and Chester W. Nimitz, ed. The Great Sea War. (Englewood Cliffs: Prentice-Hall Inc., 1960), p. 4.

[90]McMurtrie, p. 44.

[91]McMurtrie, p. 55.

CHAPTER 3

BATTLE OF THE RIVER PLATE

Introduction

This study will now turn to the Battle of the River Plate. This battle was between the British cruisers Ajax, Achilles, and Exeter, and the Admiral Graf Spee. It marked the end of the Graf Spee since she was scuttled as a result of the battle. This paper will cover only some of the major portions of the battle and major decisions which affected its outcome. The reason for this is summed up by Captain S. W. Roskill of the Royal Navy in his naval history of World War II.

> A detailed description of the battle which now took place will be of less interest to posterity than the ocean-wide strategy which led to it, and it is therefore right, without in any way belittling the gallantry and tenacity with which Commodore Harwood's lightly armed cruisers tackled their formidable adversary, that it should occupy a smaller space in these pages. What matters is the far-flung dispositions ordered by the Admiralty and the hunting operations conducted by the responsible Flag Officers finally yielded the desired result to one of the groups so employed and thus eliminated a serious threat to our shipping.[1]

This paper will not spend a great deal of time on the chronological events of the battle itself. Battle of the River Plate by Geoffrey Bennett and Graf Spee: The Life and Death of a Raider by Dudley Pope cover the events of the battle in detail. Rather, it will examine the battle with

the intent of finding lessons learned which are applicable today.

British Locate Graf Spee

The Graf Spee sank her seventh victim, the S.S. Doric Star, on 2 December 1939, approximately 400 miles west of Southwest Africa. Unfortunately for the Graf Spee, the Doric Star was able to get the following distress signal out: "19° 15′ S, 5.5° E, gunned battleship."[2] Numerous urgent radio messages from Simonstown and Durban, South Africa, to all British warships in the African area attest to the fact that this distress message was received. The Naval Staff indicated that the appearance of the Graf Spee resulted in increased British naval activity in the area. In spite of this, the Graf Spee radioed her intentions to the Naval Staff that she would continue her attacks on merchant shipping.[3] Captain Langsdorff, knowing that he had stirred up a hornet's nest, headed towards the River Plate.[4]

The following day, the Graf Spee sank her next victim, the S.S. Tairoa. She, too, was able to get out a distress call. Her signal was garbled and the only thing actually received was "RRR[5] 21°20′ south 310 battleship Von Scheer."[6] Even though the distress signal was incomplete and did not even include the name of the ship, it is significant for two reasons. First, it added credibility to

the Doric Star's distress signal of the day before. Distress signals can be faked to throw off the enemy. Second, as the message indicates, there was still confusion as to the identity of the raider. For whatever reason, the Tairoa was convinced she was being attacked by the Admiral Scheer.

The commander of the South Atlantic Squadron (Force G), Commodore Harwood, had considered the possibility that a raider would sooner or later be tempted to operate in the heavy merchant traffic areas off Rio de Janeiro and the River Plate. After receiving information on the Doric Star's distress call, he calculated that her assailant could reach Rio de Janeiro by 12 December, the River Plate by 13 December, and the Falkland Islands by 14 December 1939. He decided that the River Plate area was the most vital to defend and decided to concentrate his forces there. His evaluation of the situation was correct and just after dawn, 13 December 1939, smoke was sighted on the horizon. Captain F. S. Bell, the commanding officer of H.M.S. Exeter, was sent to investigate. At 0614 he signalled Commodore Harwood, "I think it is a pocket-battleship."[7]

Comparison of Forces

The British force consisted of the 8-inch cruiser Exeter, and two 6-inch cruisers, Ajax and Achilles. None of

these ships by itself was a match for the Graf Spee. The specific details of these ships are covered in Chapter 2 of this thesis. There were several advantages, however, that the British had with their combined abilities. They were faster than the Graf Spee and had a larger number of guns which could maintain a higher rate of fire than the guns of the Graf Spee.[8] Commodore Harwood intended to attack immediately, with his ships in two divisions. This would enable the ships to report each other's fall of shot.[9] The other advantage was it forced the Graf Spee to divide its main batteries instead of concentrating them in one direction.

The Gunnery Duel: 0614-0740

This phase of the battle lasted for less than one and one half hours. It was followed by a second phase where the Ajax and Achilles pursued the Graf Spee to the River Plate where she then entered the port of Montevideo, Uruguay. The first phase of the battle was essentially a gunnery duel between the British and the Graf Spee.

The Graf Spee had the advantage as far as firepower was concerned. A broadside of the Graf Spee's main battery of 11-inch guns had a weight of approximately 4,140 pounds. The broadside of the Exeter weighed 1,600 pounds; the Ajax and Achilles had a weight of 900 pounds each.[10] This gave

the British a total main armament broadside weight of only 3,400 pounds, compared to 4,140 pounds for the Graf Spee. It should also be noted that the secondary battery of eight 5.9-inch guns of the Graf Spee was only slightly smaller than the eight 6-inch main guns on the Ajax and Achilles. Gun for gun, the British were at a distinct disadvantage. Additionally, the armor protection on the Graf Spee was much greater than that of the British ships.

Although the British were outgunned, they had one major advantage over the Germans: their three ships compared to the Germans' one. This enabled the British to attack from different directions at the same time which gave the Graf Spee more targets and, of course, more attackers to worry about. The Graf Spee at times divided her main battery between two of the British ships, but this reduced the concentration and effectiveness of the fire.[11] Usually the Graf Spee would concentrate her main battery on only one ship. This increased the concentration of fire, but left her with two ships unengaged with her most effective guns. The Graf Spee would attempt to engage these ships with her less effective secondary 5.9-inch guns. Although the main battery was considered "deadly" throughout the battle, it was reported that the effectiveness of her secondary battery decreased as the battle proceeded.[12]

There is one other decision Captain Langsdorff made which allowed the British to take the initiative and

eventially cost the Graf Spee the battle. He initially evaluated his attackers as one cruiser and two destroyers. Since they were between him and the open sea, he decided to run toward what he thought was a greatly inferior force and break out to the open sea. As it turned out however, it was a much stronger force than he originally thought. He should have turned the Graf Spee away from them and forced the British into a stern chase. The range of the Graf Spee's main guns was 30,000 yards and the greatest range of the British guns was only 22,000 yards. The British cruisers had a four to five knot speed advantage over the Graf Spee. If they had been forced into a stern chase, it would have taken nearly an hour to pass through the danger zone, where the Graf Spee could engage them with her main batteries, but the British could not return the fire. According to E. B. Potter in Seapower, it is doubtful they would have made it through the danger zone.[13] Instead, the British were able to attack from diverging angles and gain a much-needed advantage.

This first phase of the battle ended at 0740 when Commodore Harwood turned his ships away from the Graf Spee and disengaged. The Exeter was out of action and the armament on the remaining two ships was just slightly superior to the secondary battery on the Graf Spee.[14] Commodore Harwood's intentions were to attempt to re-engage the Graf Spee that night under cover of darkness. He hoped

to approach close enough to launch a torpedo attack.[15] This plan was overcome by events.

Even though the British had taken a beating by the Graf Spee, they did not give up. They fought so hard that 76 officers and men received medals for this action. Commodore Harwood also received immediate promotion to rear admiral for his part in the battle.[16]

The Chase: 0740-2350

At 0740, when the British decided to disengage, Captain Langsdorff made another fateful decision. He chose not to re-engage his seriously weakened and damaged foe, and headed for Montevideo, Uruguay. The British immediately gave chase, but remaining at a safe distance from Graf Spee's guns. When they would approach too close, Captain Langsdorff would turn and fire a broadside to ensure they kept their distance.[17] This lasted until the Graf Spee anchored in the neutral port of Montevideo, Uruguay, at 2350 that evening.[18]

Decision to Enter Montevideo

Although the Graf Spee had also received her share of damage, her armor deck and side belts had not been penetrated.[19] As discussed earlier, the Graf Spee's mission was to conduct war on commerce and not to seek engagment

with enemy warships for fear that even slight damage would force a premature return to Germany. This may have contributed to Langsdorff's decision to enter Montevideo for repairs. He explained his decision in a dispatch to the Naval Staff as follows: "The Graf Spee was seriously hit several times. Very little ammunition left. Unable to carry on merchant raiding operations."[20]

Damage to the British Ships

The Exeter was the hardest hit of the three British ships. She sustained six 11-inch hits and had splinter damage from near misses by both 5.9 and 11-inch shells.[21] Both forward 8-inch turrets were hit and out of commission. Power was lost to one of the two after 8-inch turrets. When she disengaged from the action at 0730, she was listing heavily to starboard and could no longer keep up with the other ships.[22] Her casualties were 64 killed and 20 wounded.[23]

The Ajax received two 11-inch hits which put her two aft 6-inch turrets out of action. She also received considerable splinter damage to her topside from numerous near misses.[24] She suffered casualties of seven dead and five wounded.[25]

The Achilles did not take any direct hits, however she too suffered from splinter damage from near misses.[26] Her casualties were four killed and three wounded.[27]

Several months after the battle, the United States Navy published a confidential information bulletin on the Battle of the River Plate. It has since been declassified and contains an in depth evaluation of the battle, particularly of the damage sustained by the ships involved.[28] The reader is directed to this publication for a more in depth account of the damage resulting from each shell hit taken by the various ships.

Damage to the Graf Spee

During the battle the Graf Spee received two 8-inch shell hits, fifteen 6-inch shell hits, and one hit that was not possible to determine the size of the projectile.[29] This resulted in 36 killed and 60 injured, a few fatally.[30] The effect of the damage inflicted on the ship is best summed up by Captain Langsdorff in his message to the Naval Staff.

> The main damage to the ship consists of a few holes in her hull, causing intake of water in heavy seas. Galley and bakery destroyed, therefore messing at sea no longer possible. Optical sight in foretop out of order. Shortage of ammunition for main and secondary armament. Two-thirds of the heavy anti-aircraft guns are out of action. The Chief Engineer and Marinebaurat (ret.) Krankenhagen, who arrived in Montevideo on 14 Dec. by plane, estimate that, even if the utmost effort is made,

> two weeks will be needed to make the ship seaworthy again with the facilities available in Montevideo. An extension was requested on 14 Dec.[31]

Although the seaworthiness of the ship was obviously not at its optimun, she was still capable of getting underway. This is demonstrated by the considerations of attempting a breakthrough to Buenos Aires for better repair facilities.[32] Even if the captain was willing to risk the trip back to Germany, he still had the most serious problem of all to overcome: lack of ammunition. His supply ship, Altmark, did not carry extra ammunition.[33] Even if the Graf Spee was able to successfully break out into the open ocean, she would not be able to resupply her depleted ammunition. This would leave her virtually defenseless as she would attempt to breakthrough the British defenses in returning to Germany.

There is an important lesson to be learned here. Even the most powerful ship must be resupplied periodically. A nuclear powered aircraft carrier, for example, is still limited by its need to bring on jet fuel for its aircraft every three to five days. At a heavy flying tempo, as would be expected in a war, the entire usable fuel load would be consumed in fewer than ten days.[34] Sinking the oilers in transit to a carrier battle group can neutralize a carrier just as effectively as sinking the carrier itself, and can probably be done more easily. Just as the Graf Spee was essentially neutralized by the inability to resupply with

ammunition, today's ships can be defeated in a similar manner if sufficient precautions are not taken.

Montevideo

The events which occurred during the Graf Spee's stay in Montevideo are a story in themself. They will not be covered in detail, however, and only a brief summary will be provided to enable the reader to understand the events which led to the destruction of the Graf Spee.

According to the XIII Hague Convention of 1907 on neutrality in naval war, the Graf Spee could remain in the neutral harbor of Montevideo for only 24 hours.[35] This could be extended if it was necessary to repair damage to the ship prior to going back to sea.[36] This decision, however, was up to the local authorities.[37] Captain Langsdorff was able to obtain only a 72 hour extension from the Uruguayan government in order to effect the necessary repairs to his ship. The British government objected strongly to the extension at first. They later realized that it was to their advantage to have the Graf Spee remain in port until they were able to reinforce their badly damaged naval force. One of the methods used was the spreading of false rumors that the reinforcements had already arrived. Also, they would sail British merchant ships in an attempt to keep the Graf Spee in port.[38]

International law did not allow a belligerent to sail within 24 hours of the sailing of an enemy's ship.[39] This worked well since, as we have seen, Captain Langsdorff had a tendency to abide by international law.

The extension of time in Montevideo expired at 2000, 17 December.[40] Attempts to receive a further extension failed, and the Graf Spee faced the decision to depart Montevedio and sail into what it believed to be a superior force, or face possible internment by the Uruguayan government.[41]

While in Montevideo, one task that Langsdorff had to attend to was the burying of his dead. A funeral procession carried the coffins to a cemetery outside Montevideo while hundreds of people looked on. At the end of the ceremony, there are photographs of Captain Langsdorff saluting with the old German naval salute, while the rest of the Germans present used the Nazi salute.[42] This may have been an indication of his true feelings about the regime he served. The most fitting honor to the dead of the Graf Spee was given by the British seamen who had been confined on the Graf Spee when their ships had been sunk. They not only attended the funeral, but layed a wreath on the coffins of their former adversaries, inscribed: "To the memory of brave men of the sea from their comrades of the British Merchant Service."[43] Considering the sea battle that just took place and the fact that these merchant sailors were

recent prisoners of the Graf Spee, it is quite a tribute they paid to those fallen sailors.

Decision to Scuttle the Admiral Graf Spee

Captain Langsdorff informed the Naval Staff on 16 December that a breakout to the open sea and a return to Germany was impossible. He also stated he believed the aircraft carrier H.M.S. Ark Royal and the battle cruiser H.M.S. Renown had a tight blockade of the area. He discussed the possibility of a breakthrough to Buenos Aires, but requested permission to scuttle his ship if he thought a breakthrough attempt would lead to sure distruction of his ship with little chance of serious damage to the enemy. The Naval Staff's response was that the ship was to be scuttled only as a last resort. He was told, however, that effective destruction was preferred over the location of the scuttling.[44] This was a serious consideration since the estuary of the River Plate was shallow, only 10-15 meters, out to at least 35 miles. Merely sinking her would not be sufficient due to the depth of the water.[45]

The actual sinking of the Graf Spee is summed up nicely by Langsdorff in two messages to the Naval Staff.

Buenos Aires 18 Dec. 1939 to Naval Staff

1. The Admiral Graf Spee was destroyed at 2254 GMT on 17 Dec., 4.2 miles off shore in a depth of eight meters by detonating six torpedo heads and

the remaining ammunition and by setting fire to all her fuel. No casualties.

2. Before the Spee put to sea one thousand of her crew were transfered to the steamer Tacoma. The Tacoma followed the Graf Spee and transferred the sailors outside territorial waters to two Argentine tugs which had been dispatched there for this purpose. The demolition squad of 42 men was also transferred to the tugs by the ship's lifeboats after their work had been completed.

3. Arrived at Buenos Aires at 1410 GMT on 18 Dec.[46]

The following day, Captain Langsdorff sent a supplementary message where he explained that the preparation for the demolition had required 24 hours in order to destroy all important systems and weapons. The ship was already defenseless when she sailed.[47]

According to the British Naval Attache' to Argentina, Captain Henry McCall, a large crowd had gathered with the expectation of witnessing a great naval battle. The Graf Spee sailed just before sunset and was blown up right at sunset, resulting in huge flames and smoke as the fuel oil burned. The fire burned for four days before it was finally out.[48] The Graf Spee slowly sank into the mud; by 1948 only the control tower remained above the water. She is no longer visible today.[49]

It should be noted that the lack of ammunition presented two different problems to Captain Langsdorff. The obvious one was a lack of ammunition to fight. Second, he needed a certain amount of ammunition on board to

effectively destroy his ship. He in essence blew up the magazines which resulted in the ship's destruction. If he had expended his remaining ammunition in a break out attempt, he may not have been able to successfully destroy his ship in the shallow water, thus risking possible capture by the British. Additionally, he probably avoided a large loss of life on the part of his crew by choosing not to fight when there was no hope of winning or inflicting serious damage to the enemy.

Fate of the Crew

The majority of the crew was held in internment camps until Argentina entered the war on the side of the Allies in March 1945, when they became prisoners of war. More than 43 officers escaped in at least three groups between 1940 and 1942. A number of enlisted men also escaped, but the great majority of the crew "enjoyed Argentinian hospitality" until released in February 1946. At that time there were six officers and 894 enlisted repatriated on board the British liner Highland Monarch, escorted ironically by Graf Spee's former adversary, H.M.S. Ajax The good treatment of the crew is evidenced by the fact that 168 enlisted men chose to stay in Argentina after the war and were joined by more later. By 1972, approximately 500 of the Graf Spee's crew had settled in Argentina.[50]

Suicide of Captain Langsdorff

The fate of Captain Langsdorff was less fortunate than that of his crew. When he arrived in Buenos Aires after scuttling his ship, he expected a warm welcome and for his crew to be treated as shipwrecked men. Instead, he was attacked by the press and accused of being a coward who had failed to go down with his ship. Additionally, the Argentine government decided to intern his crew, which he did not expect. He was near exhaustion from the events of the previous several days. All of this, added to the stress of the previous three months of cruising the oceans with a major portion of the British Navy searching for him, was too much for him to handle.51

The next evening, he said farewell to his officers and men, and retired to his room. He wrote three letters: to his wife, his parents, and the German Ambassabor. He then unwrapped an ensign of the old Imperial German Navy, and took out his revolver. One of his officers found him the next morning dead, his body laying on the ensign. The fact that he did not use the Nazi ensign was probably a good indication of Captain Langsdorff's final attitude towards that regime.52

The funeral took place the next day at the German cemetery in Buenos Aires. It was attended by the Graf Spee's officers and men, members of the Argentine military,

the German Ambassador and, most significantly Captain Pottinger, master of the S.S. Ashlea, the third ship sunk by the Graf Spee. He represented the captains of the British merchantmen who had been prisoners on the Graf Spee.[53]

Findings and Conclusions

After studying the career of the Admiral Graf Spee, there are numerous findings and conclusions which can be drawn. Many of these apply to commerce raiding and most have applications to the United States Navy in general.

1. The Treaty of Versailles left Germany with an ineffective navy following World War I.

2. It was impossible to build modern battleships within the Treaty limit of 10,000 tons.

3. Pocket battleships were the solution to the Treaty restrictions.

4. The Germans interpreted the 10,000 ton limitation liberally and to their advantage. The resulting pocket battleships were actually up to 20% larger than the Treaty permitted, depending on one's interpertation of the limitation.

5. Pocket battleships were a formidable force. They could outgun any heavy cruiser in existence and outrun all but British battleships at that time.

6. The Graf Spee was sailed secretly before the war which enabled her to operate covertly. More importantly, though, this may have prevented her from being trapped in port or home waters.

7. Her mission was to destroy and disrupt enemy merchant shipping, which she did successfully.

8. She was to avoid engaging any enemy warships in order to prevent damage which might force a premature return to Germany.

9. The use of commerce raiding, and the degree to which it is employed, must be tailored to the specific situation as the Germans did in the opening weeks of the war.

10. The Graf Spee had her own supply ship which allowed her great flexibility in choosing an operating area.

11. The lack of a capability to resupply ammunition was a serious shortcoming.

12. The captain used various means of deception to keep his identity and location secret.

13. The true identity of the Graf Spee was not known until the Battle of the River Plate. This attests to a serious deficiency in British intelligence at that time.

14. The personality of the commanding officer directly affected the tactics employed as a commerce raider.

15. Captain Langsdorff was able to successfully conduct his mission in accordance with the international laws of naval war.

16. He took adequate precautions to prevent the unnecessary loss of civilian life. Not one life was lost in the sinking of all nine merchant ships.

17. His prisoners were all treated well.

18. A total of 29 English and French warships were tied up in the search for the Graf Spee and Deutschland. Many of these ships had to be diverted from other areas of operation.

19. The prevention of distress calls by a raider's victim is critical to covert operations. This is best achieved by the element of surprise and the threat and use of force if required.

20. The inferior British force fought tenaciously and employed excellent tactics at the River Plate.

21. The British "victory" at the River Plate was not achieved during the battle, but rather through the use of deception and diplomacy at Montevideo.

22. Although the Graf Spee was damaged during the battle, her armored deck and side belts, which protected the ship's vitals, had not been penetrated.

23. The lack of ammunition, and not damage, was the overiding consideration in scuttling the ship.

24. The press can have a significant effect on military operations. Its criticism directly contributed to the suicide of a great naval officer who otherwise would have lived to fight again, as many of his officers were able to do.

Summary

In summary, there are numerous lessons to be learned from the career of the Admiral Graf Spee as a commerce raider. Although ships and weapons have changed since that time, many of the basic principles still apply today. The value of commerce warfare is not only in the number of ships sunk, but in the size of the enemy force that must be committed to protecting merchant ships and hunting down the raider. As in the case of the Graf Spee, commerce warfare can definitely be conducted as an economy of force effort. This study will now turn to the Iowa Class battleships in order to apply this study to the United States Navy.

NOTES

[1]Stephen Wentworth Roskill. The War at Sea, 1939-1945. Vol. 1. (London: H. M. Stationary Office, 1954), p. 118.

[2]War Diary, Operations Division, German Naval Staff, 1939-45. Trans. U. S. Navy Dept. (Wilmington: Scholarly Resources, 1984), 2 December 1939.

[3]War Dairy, 2 December 1939.

[4]Geoffrey Bennett, Battle of the River Plate. (Annapolis: U. S. Naval Institute, 1972), p. 28.

[5]The distress signal, RRR, was used to indicate attack by a merchant raider.

[6]Dudley Pope, Graf Spee: The Life and Death of a Raider. (Philadelphia: Lippencott, 1957), p. 131.

[7]Bennett, pp. 33-34.

[8]Bennett, p. 36.

[9]Roskill, p. 118.

[10]Pope, p. 151.

[11]Roskill, p. 118.

[12]Bennett, p. 38.

[13]E. B. Potter and Chester W. Nimitz, ed. Seapower. (Englewood Cliffs: Prentice-Hall Inc., 1960), p. 493.

[14]Roskill, p. 119.

[15]Potter, Seapower., p. 494.

[16]Bennett, pp.86-88.

[17]Roskill, p. 119.

[18]Bennett, p. 42.

[19]Navy Department. The Battle of the River Plate between the British Cruisers Ajax, Achilles, and Exeter and the German Armored Ship Admiral Graf Spee. (Washington: U. S. Government Printing Office, 1940), pp. 34-44.

[20]War Diary, 14 December 1939.

[21]Navy Department, p. 9.

[22]Roskill, pp. 118-19

[23]Navy Department, p. 9.

[24]Navy Department, pp. 16-17.

[25]Navy Department, p. 9.

[26]Navy Department, p. 17.

[27]Navy Department, p. 9.

[28]Navy Department, pp. 9-45.

[29]Navy Department, p. 18.

[30]Navy Department, p. 9.

[31]War Diary, 16 December 1939.

[32]War Diary, 16 December 1939.

[33]War Diary, 15 August 1939.

[34]The author spent two years as the Aviation Fuels Officer on the U.S.S. Dwight D. Eisenhower (CVN-69)

[35]Dietrich Schindler and Jiri' Toman, ed. The Laws of Armed Conflict. (Alphen aan den Rijn, The Netherlands: Sijthoff & Noordhoff, 1981), p. 857, Article 12.

[36]Dietrich, p. 858, Article 14.

[37]Dietrich, p. 858, Article 17.

[38]Roskill, p. 120.

[39]Dietrich, p. 858, Article 16.

[40]Roskill, p. 120.

[41]War Diary, 16 December 1939.

[42]Pope, pp. 209-210.

[43]Pope, p. 210.

[44]War Diary, 16 December 1939.

[45]War Diary, 19 December 1939.

[46]War Diary, 19 December 1939.

[47]War Diary, 19 December 1939.

[48]Henry McCall. "The Trap," History of the Second World War, 1, No. 5 (1966), p. 117.

[49]Bennett, p. 58

[50]Bennett, p. 53.

[51]Bennett, p. 52.

[52]Pope, pp. 235-37.

[53]Pope, p. 238.

CHAPTER 4

IOWA CLASS BATTLESHIPS

Introduction

Robert O. Dulin, in United States Battleships in World War II, gives us the following description of Iowa Class Battleships:

> Without question the Iowa-class battleships were the best ever built. They possessed an unmatched combination of offensive power, good protection, and high speed. Ships of other nations occasionally equalled or surpassed them in specific categories, but no other capital ships ever built had such an impressively balanced combination of military characteristics.[1]

A total of six ships of the Iowa Class were authorized for construction. The Iowa (BB-61) and New Jersey (BB-62) were authorized on 17 May 1938. The Missouri (BB-63) and Wisconsin (BB-64) were authorized for construction on 6 July 1939. The final two ships, Illinois (BB-65) and Kentucky (BB-66), were authorized in the summer of 1940.[2] The Illinois and Kentucky, however, were not completed by the end of the war, and were sold for scrap in 1958.[3]

The keels of the four ships completed were laid between 27 June 1940 and 25 January 1941. They were launched approximately two years later, and within a year of launching they were commissioned and operational. On 27

August 1943 the Iowa became the first operational ship; the last of the four to become operational was the Missouri in December 1944.[4]

Brief History of the Class

Iowa Class battleships were completed too late in the war to serve in the traditional role of battleships. They did, however, perform their assigned tasks superlatively well. They performed the roles of shore bombardment and anti-aircraft defense for carriers.[5] This paper will only briefly list their periods of active service with the fleet. A series of books published by the United States Navy, Dictionary of American Naval Fighting Ships, goes into great detail on the careers of the U.S. battleships.[6] The reader is directed to these books for a more indepth study of the role of Iowa battleships during World War II, Korea, and Vietnam.

The Iowa was decommissioned 24 March 1949 and recommissioned on 25 August 1951 to participate in the Korean War. She was again decommissioned on 24 February 1958 and entered the Atlantic Reserve Fleet at Philadelphia.[7] She remained there until she was recommissioned once more on 28 April 1984.[8]

The New Jersey is presently on her fourth tour with the active fleet, having been recommissioned on 28 December

1982.[9] She was first decommissioned 30 June 1948 for a brief time before being recalled on 21 November 1950 for the Korean War. She was then decommissioned from 21 August 1957 until 6 April 1968, when she was again called to serve her country during the Vietnam War. This brief tour lasted until 17 December 1969, when she again entered the reserve fleet.[10]

The Missouri was decommissioned on 26 February 1955 after serving in the Korean War. She entered the Pacific Reserve Fleet at Bremerton, Washington, where she became a tourist attraction with more than 100,000 visitors a year.[11] She was called back to the active fleet and recommissioned 1 July 1986.[12]

The Wisconsin is currently being reactivated and is scheduled to be recommissioned in January 1988.[13] She was originally decommissioned on 1 July 1948, but was also called back for the Korean War on 3 March 1951. She was decommissioned 8 March 1958 and joined the reserve fleet at Bayonne, New Jersey, until her recent call to active duty.[14]

Present Doctrine for Employment

According to the Secretary of Defense in his annual report to Congress, battleships are a potent supplement to carrier battle groups. In war they could be used for naval gunfire support for amphibious operations or in a power

projection role. Their peacetime role is to maintain a naval presence in waters that are routinely patrolled by the Navy. During FY 87, the Navy is planning on alternating a battleship battle group with a carrier battle group in the Western Pacific.[15]

Characteristics of the Class

Description

Iowa Class battleships are the largest battleships ever built in the United States. They have a standard displacement of 45,000 tons and a full load displacement of 58,000 tons. They have a length of 887.2 feet, a beam of 108.2 feet, and a draft of 38 feet. They carry a complement of 62 officers and 1,500 enlisted. Additionally, they carry a detachment of 44 Marines, 2 officers and 42 enlisted.[16] To gain a better appreciation of the size of these ships, it should be noted that the only ships in the United States Navy that are larger in displacement, size, or complement are aircraft carriers.

Range / Speed

The Iowas are powered by eight Babcock & Wilcox 600 psi boilers connected to four General Electric geared turbines (Westinghouse turbines in BB-62 and BB-64). These

engines power four shafts which produce a total of 212,000 shaft horse power. They have a maximum speed of 35 knots.[17] According to information in Jane's Fighting Ships, 1985-86, Iowa Class battleships are the fastest major surface combatants in the United States Navy today. [18]

These battleships carry 6,840 tons of Navy distillate fuel. This gives them an unrefueled range of 15,000 nautical miles at 17 knots or a range of 5,000 nautical miles at 30 knots.[19] With refueling at sea, their maximum range becomes indefinite.

Armor Protection System

Iowa Class battleships are the most heavily armored U.S. warships ever constructed. They were designed to withstand the effects of 18-inch guns.[20] This is more than the traditional armor protection where a battleship, such as an Iowa Class, would be designed to withstand 16-inch projectiles.[21] As mentioned earlier, there have been only two ships in the world ever built with 18-inch guns.

The major components of the armor protection system are as follows:

Main side belt - 12.1 inches tapering vertically to 1.62 inches

A lower belt aft of turret No. 3 to protect the propeller shafts - 13.5 inches

Turret faces - 17 inches

Turret tops - 7.25 inches

Turret backs - 9.5 inches

Barbettes - max of 17.3 inches

Second deck armor - 6 inches22

The actual design and layering of the armor is as important as the thickness of the plates. The main side belt is angled outward 19° which gives the 12.1 inches of armor an effectiveness equivalent to 17.3 inches of vertical armor. Deck armor is another example. The main deck has 1.5 inches of armor, the second deck 6.0 inches, followed by a splinter deck of 0.625 inches. The third deck has from 0.5 to 1.0 inches of armor. This deck armor is designed to protect the magazines and machinery spaces by preventing the penetration of armor piercing projectiles and protecting from the blast damage of a high explosive projectile.[23]

The main weakness in the armor protection system is the possibility of damage from vertically dropped bombs. The armor protection system was designed for protection from the relatively flat trajectory of naval guns against which it was very effective. Although the Iowas have an increased deck protection over earlier designs, it is virtually impossible to provide effective protection from large armor-piercing bombs. One reason for the damage to battleships at Pearl Harbor was that the Japanese are

believed to have used 14-inch armor piercing shells modified for use as bombs.[24]

Underwater Protection System

The underwater protection system on the Iowa Class will be considered in two different areas, side protection and bottom protection systems. The design considerations were esentially the same in all modern United States battleships.[25] Exact details are not readily available for the Iowa Class. Dulin, in Battleships: United States Battleships in World War II, gives in depth details on all other classes of battleships of the World War II era. One reason for this lack of available information is that the Iowa Class was never striken from the Navy List, as were all other battleships. When the Iowa Class ships were decommissioned after World War II, they were placed in the reserve fleet in "mothballs."[26] The information exists, since the ships are returning to the active fleet, although most of it is probably either classified or "for official use only."

The underwater side protection consists of both the side armor belt described earlier and a series of compartments between the outside of the ship and the vital interior. These compartments were designed to be either liquid filled (tanks) or empty (voids). This combination of

tanks and voids was designed to absorb the explosion of a torpedo or contact mine and prevent damage to the ship's interior. Dulin describes it as giving "superior resistance to underwater detonations."[27]

The bottom protection system consists of two layers of tanks and/or voids. The intent of the system is to confine damage and restrict flooding in the event of a detonation under the ship, rather than to prevent damage.[28] When the ships were designed, the possibility of such an explosion was considered remote. It was unlikely that a shell could explode under the ship and, at that time, torpedoes and mines exploded by contacting the side of a ship.[29] With the increase in technology of both mines and torpedoes, an explosion under the ship is a real possibility and must be guarded against. It is probably the most vulnerable part of the entire ship.

Ability to Sustain Damage

Iowa Class battleships had very little enemy damage during their careers. The Iowa received two 152mm shell hits, one on the main deck and the other on #2 turret, but material damage was considered negligible.[30] The New Jersey received a "friendly" 5-inch shell on the main deck, with only minor damage, and a 4-inch shell on the #1 turret, doing negligible damage.[31] The Missouri was hit by two

kamikaze aircraft with only superficial damage.[32] Finally, the Wisconsin received a 152mm shell hit on the O-2 level resulting in a small hole, again minor damage.[33]

As already discussed, the class has an excellent armor protection system and would be capable of taking considerable punishment from an enemy. One of the most susceptible areas of the ship to damage, however, is exposed electronic gear such as antennas and radars. While damaging the electronic gear with a home-on-radar missile would not sink the ship, it could seriously reduce its capability to perform its assigned mission. The need to repair or replace the electronic gear would be a small inconvenience when compared to the possible loss of a smaller ship without any significant armor protection in the same situation.

Any ship, no matter how large or well defended, can be overwhelmed by a large number of attackers, whether aircraft, torpedo boats, missiles, or other combatants. An example is the sinking of the Japanese 18-inch battleships, Yamato and Musashi, with aircraft. It must be remembered, however, that no United States battleship was ever sunk after Pearl Harbor even though they were constantly going "in harm's way."[34]

Guns

16-in/50 - Main Battery

The main battery consists of nine 16-in/50 caliber guns mounted in three Mk 7 triple gun mounts, two forward and one aft. They are capable of firing two rounds per minute per barrel with a maximum range of 38 km (41,557 yards) with high capacity (HC) projectiles and 36.75 km (40,190 yards) with armor piercing (AP) and drill projectiles. Each ship has a magazine capacity of 1,220 16-inch projectiles.35

The high capacity projectiles weigh 1,900 pounds which includes 153.58 pounds of explosives. They can be fired with either a full charge of 655 pounds of powder or a reduced charge of 315 pounds. The reduced charge would be used to obtain a higher trajectory for naval gunfire support purposes. Armor piercing projectiles weigh 2,700 pounds which includes 40.47 pounds of explosives. They are capable of penetrating 29.39 inches of armor at 5,000 yards or 14.97 inches at 30,000 yards.[36]

There are currently 18,000 16-inch war rounds available for use without any need for refurbishing. It is estimated that that amount will be sufficient for training and test purposes until 1991. It will take six months to start a production line for new projectiles.[37] Additionally, new types of projectiles are being developed.

The development includes submunition rounds which will be more effective against dispersed targets and extended range projectiles for inland targets.[38]

5-in/38 - Secondary Battery

The secondary battery consists of twin 5-inch/38 caliber guns with the Mk 32 gun mounts. The Iowa and New Jersey have six twin mounts (twelve guns) and the Missouri and Wisconsin have ten twin mounts (twenty guns).[39] They have a maximum range of 16.5 km (18,000 yards) and a rate of fire of 15 - 22 rounds per minute depending on the ability of the gun crew.[40] There is a variety of projectile types for both anti-air and anti-ship or naval gunfire support uses. They weigh approximately 55 pounds, which includes 7.55 - 7.86 pounds of explosives. The maximum anti-aircraft altitude of the projectiles is 37,200 feet.[41]

CIWS Phalanx - Anti-missile Gun

The battleships are equipped with four Mk 15 20mm Phalanx Close-in Weapon Systems (CIWS).[42] The purpose of the CIWS is to provide last ditch defense against incoming missiles. It is an automatic gun and fire control system that incorporates a six-barrel gatling gun capable of firing 3,000 rounds per minute. The system's sucess is based on its ability to track both the target and its projectiles,

then eliminate the error between the two. It uses a high kinetic energy penetrator made of high density metal. It is designed to destroy the warhead of a incoming missile by penetrating the warhead and imparting kinetic energy, causing it to blow up prior to striking the ship.[43]

Missiles

Tomahawk

The battleships are equipped with four twin Mk 143 Tomahawk launchers.[44] These eight armored box launchers each have four missiles for a total of 32 missiles. The Tomahawk is the United States Navy's long range cruise missile, designed for both land attack and anti-ship roles with either conventional or nuclear warheads. There are separate guidance systems for both roles. In the land attack role, the missile uses a terrain-following guidance system. In the anti-ship role, it is launched in the general direction of the target, and at a predetermined distance the active radar is switched on to acquire the target. The missile incorporates a solid fuel booster to reach a speed where the turbofan cruise engine can take over. The missile is 6.4 meters long with a diameter of 53 centimeters and a wingspan of 2.61 meters. The Tomahawk has a cruising speed of 885 km/hr and a range of 2,500 km for

the land attack version or 450 km for the anti-ship version.[45]

Harpoon

Iowa battleships are armed with sixteen Harpoon missiles in four quad launchers.[46] The Harpoon is a high-subsonic anti-ship tactical cruise missile. The Navy has designated it as its principal anti-ship weapon. It is an all-weather missile capable of receiving targeting information from its parent ship or from an over-the-horizon targeting platform. Once it is launched, it does not require further data inputs from the ship. The shipboard version uses a solid propellant booster motor to obtain adaquate speed for the turbo-jet cruise engine to take over. Terminal guidance is provided by an active radar homing system which maintains its lock on the target until impact. The radar homing system is frequency agile, and coupled with extensive on-board computer logic, has considerable electronic counter counter-measures (ECCM) capability. The missile is 3.84 meters long (4.58 with the booster) and has a diameter of 34 cm. It weighs 519 kg (681 kg with the booster) and has a high explosive, penetrating blast type warhead. The Harpoon has a range of more than 50 nautical miles.[47]

Weapons Systems -- Capabilities and Limitations

Anti-air Warfare

The anti-air capability of the battleships is somewhat limited. The Phalanx Close-in Weapon Systems (CIWS) provides excellent close-in protection against incoming missiles. This is, however, a last line of defense and it is preferable to destroy missiles prior to this point.

The 5-inch guns have an anti-air capability which could be used against both aircraft and incoming missiles. The effectiveness of these guns is somewhat questionable, however, against high speed aircraft and incoming missiles. A jet aircraft flying at 600 knots would be within range of the 5-inch guns for only one minute prior to reaching its drop point for bombs. With even ten guns on one side of the ship able to engage the target, firing at their maximum rate of fire, only 220 rounds would be fired. During World War II, the Navy averaged 3,000 rounds of all types to shoot down one propeller driven aircraft.[48] While projectiles and fuses have improved since then, it is easy to see that the use of guns against jets and missiles is less than 100% effective.

In order to operate independently, it would be necessary to operate in a area where enemy air activity would be at a minimum. An occasional missile from a target

could probably be handled, although a massive attack could be a problem. Additionally, the ship's armor protection would also decrease the effect of a missile hit and is a major advantage over other surface ships.

Anti-surface Warfare

The anti-surface capability of the Iowa Class is excellent. The Harpoon and Tomahawk cruise missiles give it both a close-in and an over-the-horizon capability with the proper targeting information. These two missile systems are the most advanced in the fleet. Additionally, the battleship's 16-inch guns can be used in the anti-ship role. They would be particularly useful to augment missiles for relatively close or low threat targets. The guns have a maximum of 1,220 projectiles available and obviously are a more economical means of sinking a ship than a missile would be. This would be particularly true in the case of a commerce raider where the targets would be either unarmed or lightly armed merchant ships.

Anti-submarine Warfare

Iowa Class ships have no anti-submarine capability. This would be a serious shortcoming for independent operations. In order for them to act independently, they would require some sort of augmentation.

Suggestions to Minimize Limitations

Attack Submarine in Company

One method of minimizing the deficiencies of battleships' defenses would be to have an attack submarine operate in company. There are two main advantages. First, the attack submarine could provide the needed anti-submarine capability the battleships do not have. Second, this would enhance their anti-surface capability, particularly against Soviet combatants. Although the battleships have an excellent anti-ship capability, the presence of a submarine would greatly complicate the problem for the Soviets.

P-3 Orion

The Navy P-3 Orion anti-submarine warfare airplane could be used in conjunction with the battleships to enhance their capabilities. There are three major areas where the P-3 could be beneficial. First, and most obvious, it could provide the needed anti-submarine protection. The one draw-back would be the need to operate near a P-3 airbase. The P-3s would be invaluable for intelligence purposes. They could conduct surface searches of the battleship's operating area and provide intelligence on both enemy warships and potential targets. Finally, the P-3's could provide over-the-horizon targeting information to the

battleships. This would be particularly useful in using Tomahawk cruise missiles against Soviet warships. It would enable the battleships to engage a Soviet warship without exposing themselves to enemy fire.

Use of RPV's

Another possibility to enhance the capability of the battleships would be the use of Remotely Piloted Vehicles (RPV's). The Navy is currently evaluating the Pioneer RPV for use on board ship. In April 1986, Secretary of the Navy John Lehman ordered an accelerated RPV deployment schedule for the U.S.S. Iowa. The schedule has since slipped due to a flight suspension in September 1986 as a result of two crashes. The Pioneers are to be used for gunfire spotting and damage assessment for naval gunfire support. They will be launched by catapult and recovered using a net system.[49]

The Pioneer is 16 feet long, weighs 400 pounds and can carry a 100 pound payload. It has a mission radius of 100 NM, a cruising speed of 50-80 knots and a ceiling of 15,000 feet. It can stay airborne for five to seven hours. They are presently equipped with an interchangeable TV or forward-looking infrared (FLIR) sensor.[50]

A RPV such as the Pioneer, with the addition of an electronic surveillance measures (ESM) package or even an airborne radar, would greatly improve a battleship's ability

to act independently. This addition of over-the-horizon search and targeting would be beneficial for both offensive and defensive purposes.

Comparison of Admiral Graf Spee and Iowa Class

A comparison of the Iowa Class and the pocket battleships of World War II is difficult at best. A straight comparison of size and firepower can be deceptive. In order to compare the two classes, one must look at them in a relative manner in comparison to the rest of their respective fleets first, and then to each other.

The displacement of a ship is an indication of its size. Iowa Class battleships are the largest ships in the U.S. Navy today, with the exception of aircraft carriers. They have a standard displacement of 45,000 tons and a full load displacement of 58,000 tons.[51] The next largest ship is the guided missile cruiser Long Beach (CGN-9) which has a full load displacement of 17,525 tons.[52] Next are the four Virginia Class guided missile cruisers, with a full load displacement of 10,000 tons.[53]

The Admiral Graf Spee, likewise, was among the largest ships in its navy. The only two ships which were larger were the two Scharnhorst Class battleships, with a standard displacement of 26,000 tons. Although the displacement is nearly twice that of the Graf Spee, their

main armament also consisted of 11-inch guns, although they had one more turret. They had far greater armor protection and their main armor belts were three to four times as thick as the Graf Spee's, which contributed significantly to their greater displacement.[54] The next largest ships after pocket battleships were the five heavy cruisers of the Blucher Class, with a standard displacement of 10,000 tons.[55] There were also six other cruisers with a standard displacement of 6,000 tons or less.[56] While the difference in size is not as drastic as the Iowa's, it is still apparent that the Graf Spee was one of the largest ships in the German Navy in its day.

The Iowa Class are, and the Graf Spee was, among the fastest ships in their respective navies. The Graf Spee was designed to outrun any battleship in the world or outgun any heavy cruiser of its time.[57] While it was not the fastest ship in the German Navy, it was among the fastest. The Iowa Class are the fastest major surface combatants in the United States Navy.[58]

The Iowa Class and the Graf Spee both had a substantial amount of armor protection. Although the Iowa Class has more armor, they are both well protected when compared to the warships of today. It is interesting to note that the armor on the New Jersey weighed 19,312 tons and constituted 42.77 percent of the weight of the actual

ship.[59] The difference in armor protection also partially explains the large difference in displacement.

This study is not attempting to say that the Iowa Class and the pocket battleships are exactly alike. Rather, it has attempted to show that there are many similarities and that, relatively speaking, they are similar. Since they are similar, when compared to the rest of their respective fleets, they can be examined together in this study.

Suitability as a Commerce Raider

The purpose of this chapter is to determine the suitability of Iowa Class ships as commerce raiders. As already mentioned, there are certain advantages and disadvantages to this. The ability to act independently is a key to this question. Iowa Class ships have excellent anti-ship capability, but no anti-submarine capability. This area in particular will need augmentation. The anti-air defense would be adequate in a low threat environment which could probably be achieved in the open ocean away from enemy land based air.

A major advantage of a battleship is both its size and armor protection. It will be possible to safely approach an enemy merchant ship without fear of a possible surprise attack from a hand-held missile, for example. The Phalanx CIWS could stop such an attack and, even if a

missile might get through, the armor would provide protection to the ship's vital parts. This relative lack of vulnerability is important, especially when compared to a surfaced submarine doing the same mission. This is important if the international laws of war are to be followed.

The laws governing commerce warfare will be discussed in some detail in the next chapter. As will be pointed out, a battleship is more suited to conduct commerce warfare in accordance with the law than a submarine. One of the keys to this is the fact that it has far more room to carry prisoners from ships sunk than a submarine. This, combined with a greater ability to protect itself than a surfaced submarine, make the battleship a more practical ship to conduct commerce warfare in accordance with international law.

The size of the ship , as well as its guns, would help to intimidate any of its victims. This would be true as a battleship approached it victim with a warning to stop or not to transmit a distress call. Additionally, the fear of a battleship on the loose conducting commerce warfare, as well as any submarine action, might convince a merchant captain to stay in port instead of sail. If merchant ships do not sail, that is almost as effective as sinking them in route to their destination.

NOTES

[1]Robert O. Dulin, Jr. and William H Garzke, Jr. Battleships: United States Battleships in World War II. (Annapolis: Naval Institute Press, 1980), p. 107.

[2]Dulin, p. 114.

[3]Dulin, p. 144.

[4]Dulin, p. 144.

[5]Dulin, p. 143.

[6]Navy Department. Dictionary of American Naval Fighting Ships. 8 vols. (Washington: U. S. Government Printing Office, 1968-81)

[7]Navy Department, Dictionary, Vol III, p. 455.

[8]John Moore, ed. Jane's Fighting Ships, 1985-86. (London: Jane's Publishing Company Limited, 1985), p. 695.

[9]Moore, p. 695.

[10]Navy Department, Dictionary, Vol V, pp. 62-3.

[11]Navy Department, Dictionary, Vol IV, p. 395.

[12]Morre, p. 695.

[13]Moore, p. 695.

[14]Navy Department, Dictionary, Vol VIII, pp. 434-37.

[15]Casper W. Weinberger. Annual Report to the Congress Fiscal Year 1987. (Washington: Department of Defense, 1986), p. 182.

[16]Moore, p. 694.

[17]Moore, p. 694.

[18]This is an unclassified source and many of the speeds on the nuclear powered ships are list as 30+ knots as an example. The key point is that even if there are a few ships slightly faster, the Iowas are still among the fastest ships in the fleet.

[19]Moore, p. 694.

[20]Moore, p. 695.

[21]William H. Garzke, Jr. and Robert O. Dulin, Jr. Battleships: Axis and Neutral Battleships in World War II. (Annapolis: Naval Institute Press, 1985), p. 19.

[22]Moore, p. 695.

[23]Dulin, p. 140.

[24]Dulin, pp. 140-41.

[25]Dulin, p. 205.

[26]Moore, p. 694.

[27]Dulin, p. 205.

[28]Dulin, p. 205.

[29]Dulin, p. 55.

[30]Dulin, p. 120.

[31]Dulin, p. 128.

[32]Dulin, p. 129.

[33]Dulin, p. 134.

[34]Navy Department. The Battleship in the United States Navy. (Washington: U. S. Government Printing Office, 1970), p. 22.

[35]Ronald T. Pretty, ed. Jane's Weapons Systems, 1986-87. (London: Jane's Publishing Company Limited, 1986), p. 403.

[36]Dulin, pp. 241-43

[37]Pretty, p. 403.

[38]Moore, p. 695.

[39]Moore, p. 694.

[40]Pretty, p. 404.

[41]Dulin, p. 251.

[42]Moore, p. 694.

[43]Pretty, p. 161.

[44]Moore, p. 694.

[45]Pretty, pp. 89-90.

[46]Moore, p. 694.

[47]Pretty, p. 91.

[48]Navy Department. Naval Orientation. (Washington: Navy Department, 1970), p. 410.

[49]Glenn W. Goodman, Jr. "U.S. Military RPV Programs Have Taken Big Strides in 1986." Armed Forces Journal International, (December 1986), p. 66.

[50]Goodman, p. 66.

[51]Moore, p. 694.

[52]Moore, p. 700.

[53]Moore, p. 696.

[54]Francis E. McMurtrie, ed. Jane's Fighting Ships, 1939. (London: Sampson Low, Marston & Co., Ltd., 1939), p. 222.

[55]McMurtrie, p. 225.

[56]McMurtrie, pp. 226-29

[57]Garzke, p. 6.

[58]Moore, pp. 694-705.

[59]Dulin, p. 149.

CHAPTER 5

COMMERCE RAIDING

Introduction

Commerce warfare played a major role in World War II. During the war 5,150 Allied merchant ships were sunk in all theaters of operation. Approximately 90% of these sinkings occurred in the North and South Atlantic, Mediterranean Sea, and Indian Ocean. The total tonnage lost was 21,570,720 tons. Submarines were responsible for 54.9% of the sinkings, aircraft 15.9%, and surface raiders only 4.6%. The remaining losses are considered "other" or unknown reasons. All but six surface raider sinkings occurred before the end of 1942.[1]

In an effort to bring the number of sinkings into perspective, a comparison of the total number of ships in the merchant marines of the United States and the Soviet Union today is necessary. The United States has only 530 ships and the Soviets have 1,750, for a total of 2,280 merchant ships.[2] There were 2.26 times as many allied merchant ships sunk during World War II than the two superpowers have today. Due to the potential effects of commerce warfare, it is an area that cannot be ignored.

International law governing commerce warfare

There are a number of international treaties which affect the conduct of naval war. They cover such issues as the use of submarines, naval bombardments, and the establishment of prize courts. This would be a study in itself and will not be covered in detail in this paper. The reader is referred to The Laws of Armed Conflict, edited by Schindler and Toman, which contains the texts of both past and current treaties dealing with international law.[3]

One of the most significant treaties which would affect the conduct of commerce warfare is the Treaty for the Limitation and Reduction of Naval Armaments (Part IV, Article 22, Relating To Submarine Warfare) which was signed in London, 22 April 1930. It was originally a part of the Treaty of London for the Limitation and Reduction of Naval Armaments of 22 April 1930 which expired 31 December 1936.[4] Article 22 of the Treaty is as follows:

> Art. 22. The following are accepted as established rules of international law:
>
> (1) In their action with regard to merchant ships, submarines must confirm to rules of international law to which surface vessels are subject.
>
> (2) In particular, except in the case of persistent refusal to stop on being duly summoned, or of active resistance to visit or search, a warship, whether surface vessel or submarine, may not sink or render incapable of navigation a merchant vessel without having first placed passengers, crew and ship's papers in a place of safety. For this purpose the ships boats are not regarded as a place of safety unless the safety of

> the passengers and crew is assured, in the existing sea and weather conditions, by the proximity of land, or the presence of another vessel which is in a position to take them on board.[5]

Article 23 of the London Treaty stated that Article 22 (above) would remain in effect indefinitely since it was declaratory of international law. The United States signed this treaty on 22 April 1930 and it was ratified 27 October 1930.[6] The treaty was reaffirmed by the signing of the Proces-verbal Relating to the Rules of Submarine Warfare Set Forth in Part IV of the Treaty of London of 22 April 1930. The Soviet Union was one of the acceding states to the treaty at that time.[7]

Captain Langsdorff of the Admiral Graf Spee was able to conduct his entire operations without violating this principle of international law. As a civilized nation, we need to be aware of international law and make an honest attempt to follow it, even though it may not be the most convenient course of action for us. This section is not a discussion of the pros and cons of the law, but merely how to abide by it. If an attempt is made to abide by these laws, we may need to do some serious thinking about our doctrine as it relates to commerce war. Unrestricted submarine warfare was practiced by both the United States[8] and Germany[9] during World War II. The treaty mentioned above, as well as others, were in effect at the time, and made unrestricted submarine warfare illegal.

Soviet Merchant Marine

Size

At the end of World War II, the Soviet Merchant Marine consisted of about 400 ships with a capacity of approximately two million deadweight tons. These ships were relatively old, slow, and small. The newest were the lend-lease Liberty Ships the United States provided to the Soviet Union during the war.[10]

The 1962 Cuban missile crisis contributed to the rapid growth of the Soviet Merchant Marine. It was then that the Soviets realized the inability of their merchant fleet to support their navy. They realized that a capable merchant fleet is essential to a naval power. The Soviet Merchant Marine has grown from primarily a coastal-oriented fleet to a large ocean-going fleet. Its merchant fleet now has nearly 1,750 ships with a capacity of approximately 20.7 million deadweight tons. The fleet currently operates on 70 trade routes and makes port calls at 125 countries around the world.[11]

In comparison to the Soviet Merchant Marine, the United States has not fared well. The United States Merchant Marine is composed of only 530 ships with a capacity of 20.8 million deadweight tons. Although the capacity is nearly the same, the problem is that U. S. ships are mainly large tanker and nonself-sustaining container

ships. Their military valve is significantly less than the more militarily adaptable Soviet ships.[12]

Mission

The Soviets continue to build a multi-purpose Merchant Marine, designed to compete economically for international markets, help support state policy, and maintain an ability to respond to the military needs of the Soviet Union.[13] In order to do this, the Soviet Merchant Marine has the following advantages and capabilities:

- a large national resource providing valuable hard-currency income, services and employment;

- an instrument to support the foreign policy of the state and to further the cause of Soviet Communism;

- a visible sign to the world of the prestige and power of the Soviet Union;

- a training environment for an expanding pool of experienced seamen;

- a closely controlled logistics and military support force for helping to meet the needs of the Soviet Navy on a regular basis;

- a worldwide network for intelligence collection.[14]

Based on these capabilities, it is apparent that the Soviet Merchant Marine is a significant military value to the Soviet Union. In time of global war, it will be a military force that must be dealt with.

Military value

The Soviet Union has one of the few major merchant fleets that can successfully perform both a peacetime and a wartime mission. It is capable of satisfying the logistical needs of the Soviet Navy effectively and efficiently. The Soviets have stressed the building of large sophisticated cargo ships and small tankers. This focus is opposed to the U. S. fleet of large supertankers, container ships, liquid gas tankers, and bulk carriers which are of limited military value. The Soviets have also stressed the building of high speed, roll-on/roll-off (RO/RO) combination container ships. These ships can transport most forms of military hardware, including tanks, and do not require sophisticated port facilities to offload. The Soviet Union currently has 55 of these ships with 30 more on order. They have the advantage of being competitive commercially on world trade routes as well as efficient military sealift and logistics ships.[15]

United States Navy's Maritime Strategy

In order to understand the possibility of employing commerce warfare, it is important to understand the United States Navy's Maritime Strategy. While the actual strategy is classified secret, there have been a number of prominent naval officers who have written unclassified articles for

professional journals. The following discussion of the Maritime Strategy is based on those unclassified articles.

The Maritime Strategy is the maritime component of the National Military Strategy. It is based on the worldwide use of our naval forces ranging from peacetime to global war and to war termination. It emphasizes coalition warfare and the importance of our allies as well as the cooperation of the sister services. The strategy does not purport to be a detailed war plan with timelines, tactical doctrine, or specific targets. Rather, it is designed to offer a global perspective to operational commanders and to be a foundation for advice to the National Command Authorities.[16] It is not a justification for a 600-ship navy, but a method of employing available assets. Although much of it is common sense, an understanding of it is vital to understanding the Navy's role in national defense.[17]

The Maritime Strategy is based on the strategy the Soviets are expected to employ. The Soviet belief is that a war with the West will be global in nature, violent, and decisive. The most probable center of an attack on the West would be an attack on Western Europe. Additionally, such an attack could include the involvement of Soviet surrogates, many of which are situated along critical sea lines of communications. While a war such as this may technically remain conventional, both sides will be constantly

evaluating the nuclear balance of forces in the event of escalation.[18]

The prime mission of the Soviet Navy would be to protect the homeland and its ballistic missile submarines. These ballistic missile submarines give the Soviet Union its ultimate strategic reserve. Additionally, in keeping with concern for the balance of nuclear forces, Soviet doctrine gives high priority to destroying Western nuclear assets, including aircraft carriers, ballistic missile submarines, and cruise missile equiped platforms. Others roles for the Soviet Navy, such as supporting the army or interdicting sea lines of communication, will be of only secondary importance.[19]

The above information suggests that the Soviet Navy will initially deploy in waters near the Soviet Union, leaving only a small number of ships forward deployed. The location of Soviet naval exercises confirms this interpretation.[20] If this occurs, the bulk of the United States fleet will also have to deploy to areas near Soviet home waters to counter the threat.[21] If we are successful in forcing Soviet ballistic missile submarines to retreat to their home waters, the rest of the fleet will follow. This in turn means that our fleet will follow also. If this occurs as anticipated, there will be large areas of the world's oceans relatively free of either a Soviet or U. S. naval presence. In a situation like this, the concept of

economy of force becomes important. The next section of this chapter will deal with a possible economy of force scenario using a battleship as a commerce raider.

Commerce raiding -- Indian Ocean Scenario

In light of current maritime strategy of the United States, and the expected actions of the Soviet Navy, this study will now develop a scenario where commerce raiding is a possibility. It must be understood that this is only a proposed scenario, and that actual real world developments may or may not make this possible or feasible. It is not the intent of this thesis to develop a real world plan, but rather to give a possible plan that can be tailored to suit an appropriate area of operation based on actual world conditions.

The scenario is set in the Indian Ocean. According to the discussion above, Soviet and U. S. fleets would be predominately in or near Soviet waters. An area such as the Indian Ocean would have a minimal Soviet naval presence. The United States would also be forced to use economy of force to maintain a presence in this area. There are major trade routes in this area, particularly for transporting oil from the Persian Gulf, and for the Soviets sending wartime supplies to their surrogates, or possibly to their own troops fighting on foreign soil.[22] It is anticipated that

there would be at least a small Soviet naval presence which would have to be dealt with.

In order for a battleship to operate in this area, it would have to have air cover from Diego Garcia. The air cover would be in the form of Navy P-3 Orion aircraft, providing both anti-submarine protection and intelligence information on the location of Soviet warships and merchantmen. In the event of Soviet warships, the P-3s could either attack with their Harpoon missiles or provide over-the-horizon targeting information for the Tomahawk missiles of the battleship. Tactical air assets could also be used to screen the battleship from a land-based bomber attack. This would require the battleship to be operating within range of the carrier-based naval air assets it wished to take advantage of.

In company with the battleship would be an attack submarine. The submarine would provide the needed anti-submarine protection, particularly when land-based anti-submarine warfare (ASW) assets are not available. An attack submarine would also be very useful in an encounter with Soviet warships, although such an encounter should be avoided to preclude any damage which could force the battleship to return prematurely to port for repairs.

The possibility exists that the Soviets could employ convoys to protect their merchant ships. This tactic was used by the United States[23] and Great Britain[24] during World

War II. The problem of only minimal naval assets in the region may make it difficult for the Soviets to provide protection for all their merchant ships. The battleship would concentrate on independently sailed ships much as did the Admiral Graf Spee. If convoys are encountered, carrier-based naval air could be used to destroy the escorts or provide over-the-horizon targeting for the battleship's Tomahawk missiles. The attack submarine in company could also be used against the escorts. Once the escorts are destroyed, the convoy would be ordered to stop. Any ship that failed to comply could be legally engaged and sunk even if her crew was still on board.[25]

The reason for using a surface ship instead of a submarine is the increased capability to conduct commerce warfare in accordance with international law. This is possible due to the ability to take on prisoners as well as safely approach an intended victim without being vulnerable to a surprise attack. This is something a submarine is not well suited for.

Conclusions

A number of conclusions can be drawn from this study. The conclusions from the study of the Admiral Graf Spee are included at the end of Chapter 3 and will not be repeated

here. The conclusions drawn as to the use of Iowa Class battleships as commerce raiders are as follows:

1. It is possible to conduct commerce warfare in accordance with international law with a battleship and not with a submarine, particularly regarding ensuring the safety of the merchant ship's crew.

2. A battleship is less vulnerable to a surprise attack from its victim than a submarine or a surface ship without armor protection.

3. The assistance of an anti-submarine warfare platform, either a P-3 Orion or an attack submarine, or both, is necessary for adequate anti-submarine protection.

4. The use of RPV's with appropriate sensor packages would greatly improve both the offensive and defensive capability of the battleship.

5. The use of naval gunfire, instead of missiles, to sink a merchant ship is more economical both in dollars and the amount of ordnance that a ship can carry.

6. The size and firepower of a battleship would tend to more easily intimidate a merchant captain into following orders to stop and be searched, or not to transmit a distress signal, than would a smaller ship.

7. The ability to take prisoners and treat them well would have a psychological effect on the enemy and make him more willing to give up than to fight to the death.

8. It is possible to use Iowa Class battleships in an economy of force role as a commerce raider.

Recommendations

The main purpose for bringing the Iowa Class battleships out of "mothballs" was for their naval gunfire ability in support of amphibious operations.[26] This will probably tend to be their main function in a global war. Their other mission, that of maintaining a naval presence,[27] could be achieved as a commerce raider in an area such as the Indian Ocean in the above scenario. This would be especially true as naval assets were stretched thin and economy-of-force became more important.

While it is possible to use Iowa Class battleships in an economy of force role as commerce raiders, it may not be the best use of our naval assets. A more practical ship to employ may be a new design similar to the pocket battleships of World War II. This would be a heavily armed ship with anti-ship and anti-air missiles as well as naval guns and torpedoes to sink merchant ships. It would require adequate armor protection to negate the effect of a surprise attack from its potential victim. It would also require some

degree of anti-submarine warfare capability for self-defense. Additionally, space would be required to hold prisoners from its victims. With the exception of armor protection, U. S. Navy cruisers come close to this description. Cruisers, however, are designed primarily for anti-air warfare.[28] With their mission of anti-air warfare in a carrier battlegroup, they may not be available for commerce raiding. Therefore, either a new or a modified design specifically designated for commerce warfare may be a good alternative.

Questions for further research

While this study has dealt with commerce warfare from a limited historical perspective, as well as a proposed present-day scenerio, it has left several questions unanswered. These questions are beyond the scope of this study, but are worthy of further research:

1. Is commerce warfare practical or necessary during a global war with the Soviet Union?

2. Is it possible and practical to carry out commerce warfare in light of present international law?

3. Should international law be changed to reflect current weapon systems and tactics?

Summary

In summary, this study has determined that it is possible to use Iowa Class battleships in an economy of force role as commerce raiders. A decision to do this, however, must be based on whether or not this would be the most efficient use of available naval assets. This decision can best be made with a solid understanding of both the historical use of commerce raiders and the expected tactical situation in which they would be employed.

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[20]Watkins, p. 7.

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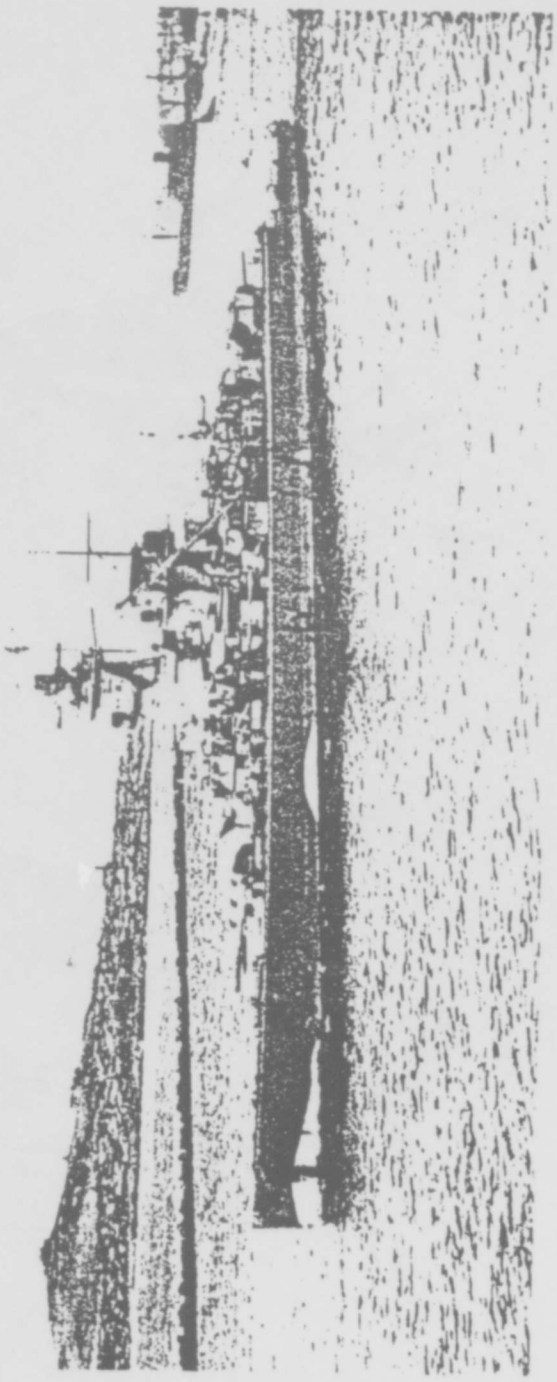
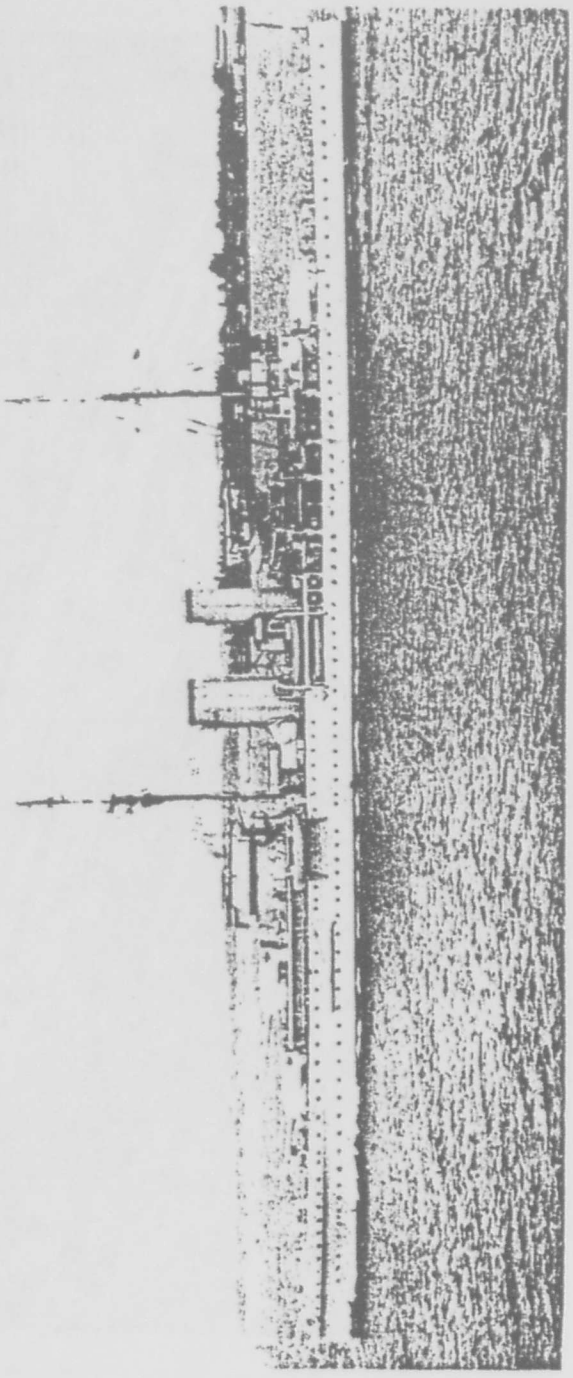
Captain Hans Langsdorff



Panzerschiff Admiral Graf Spee



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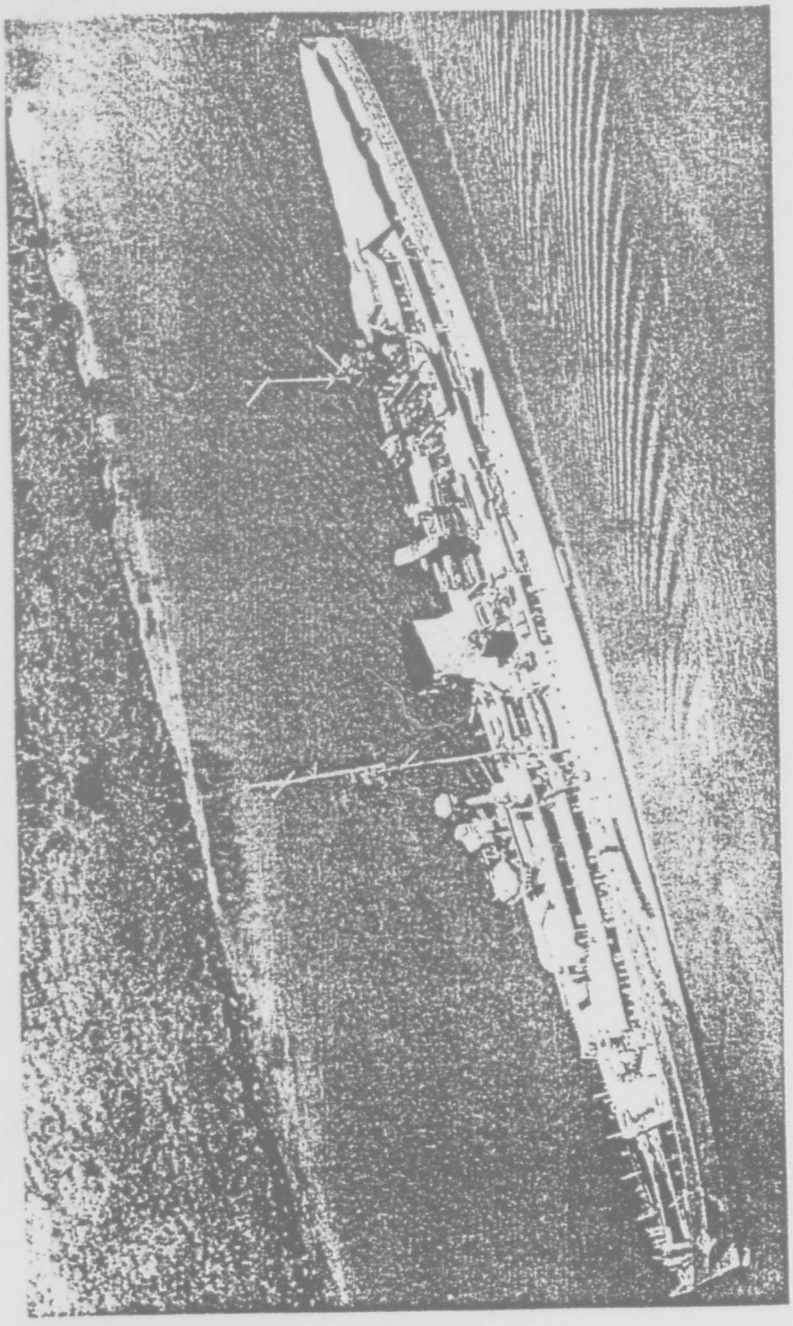

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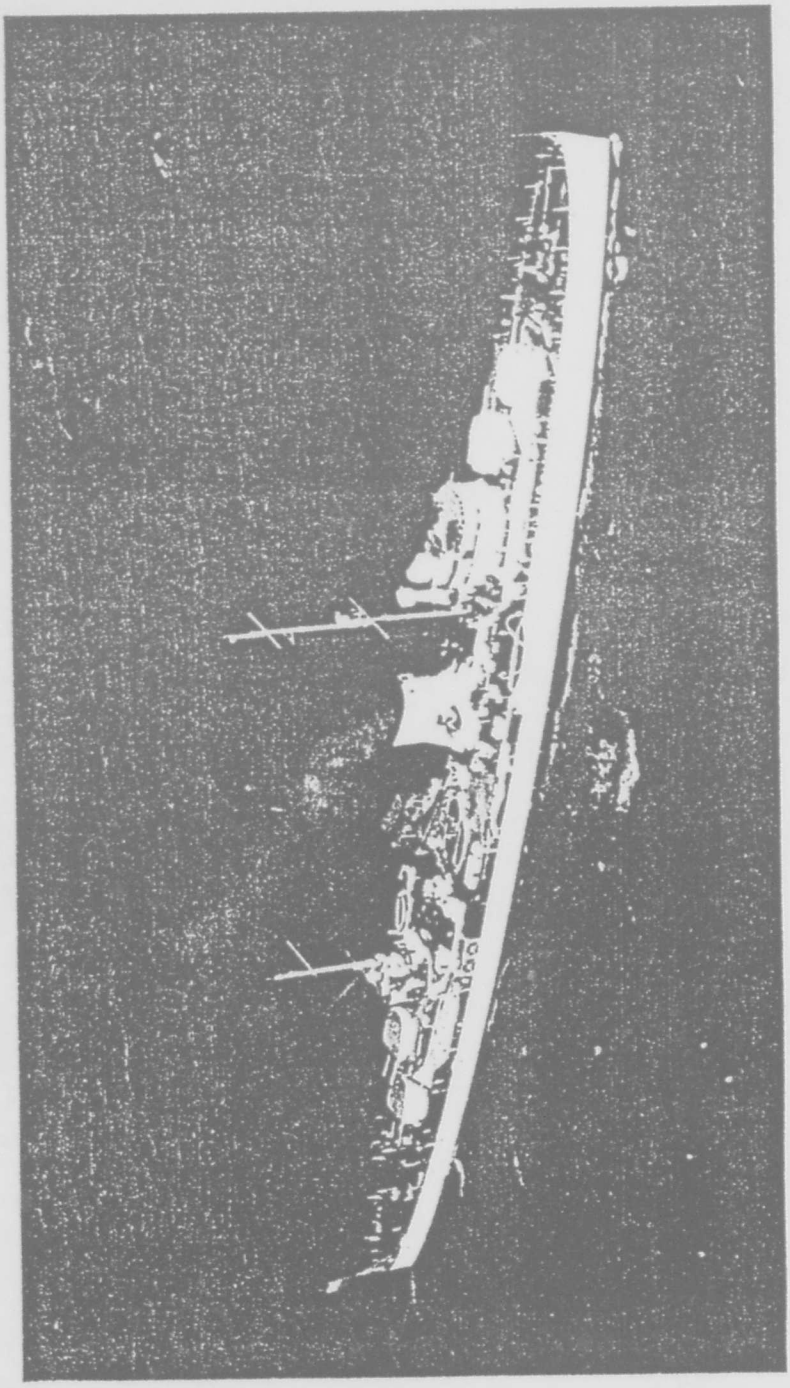

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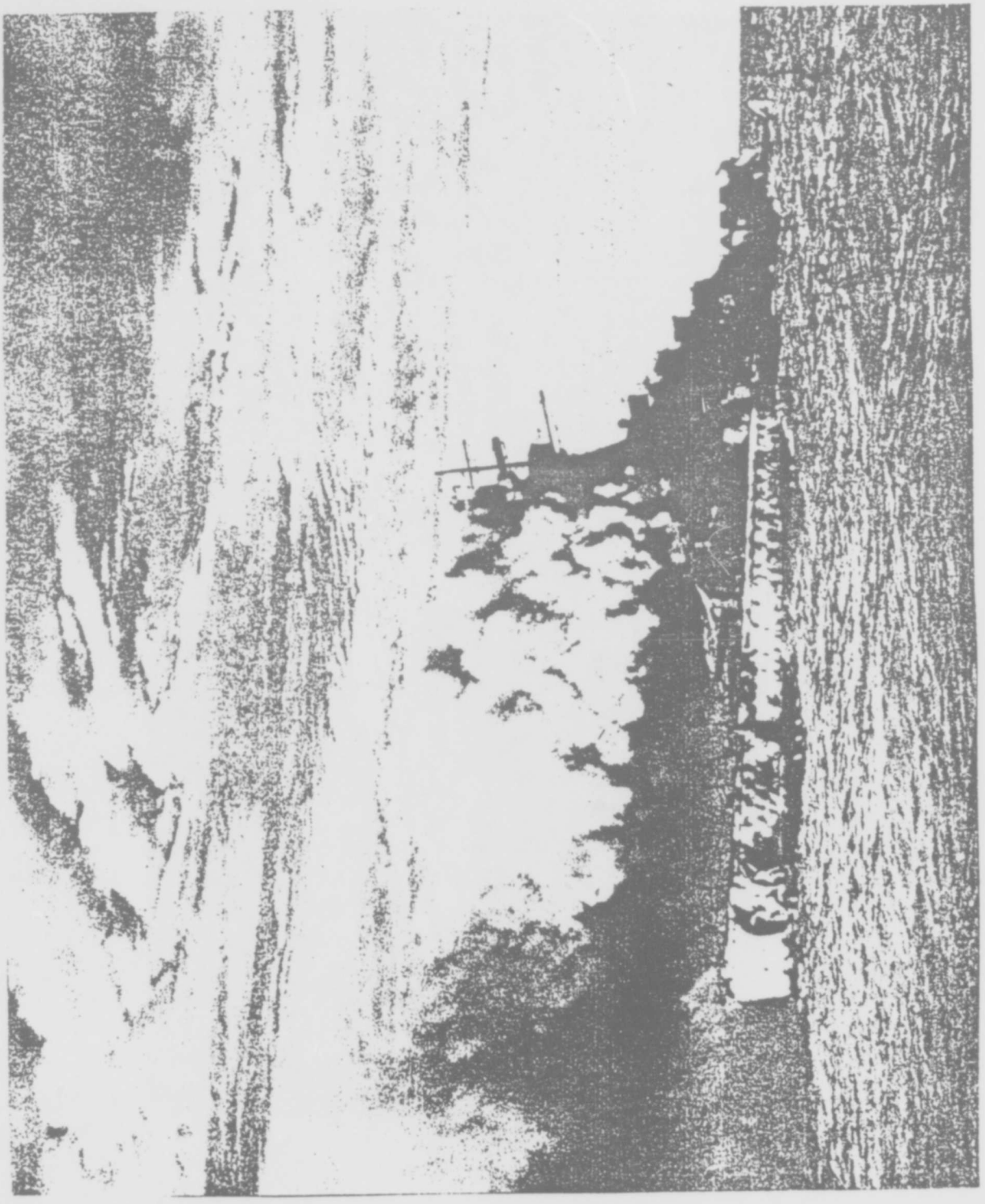
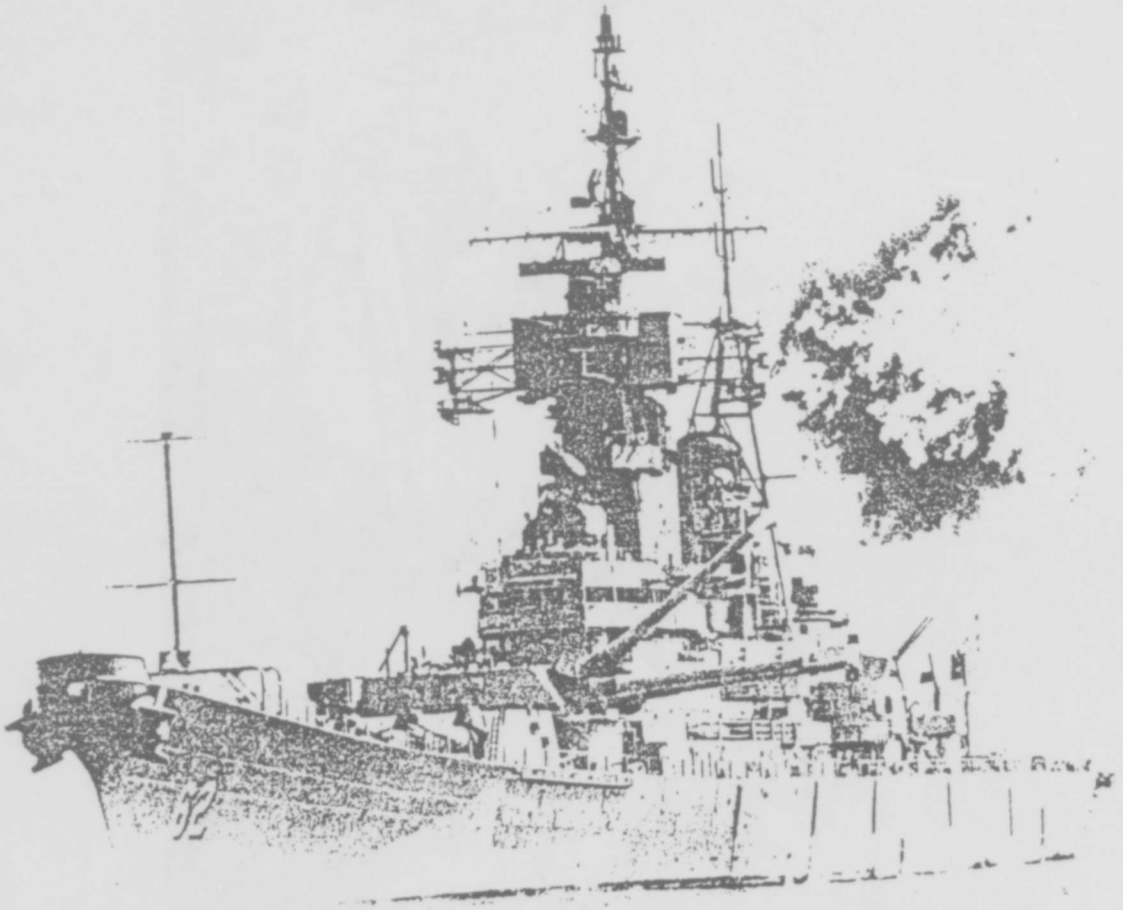
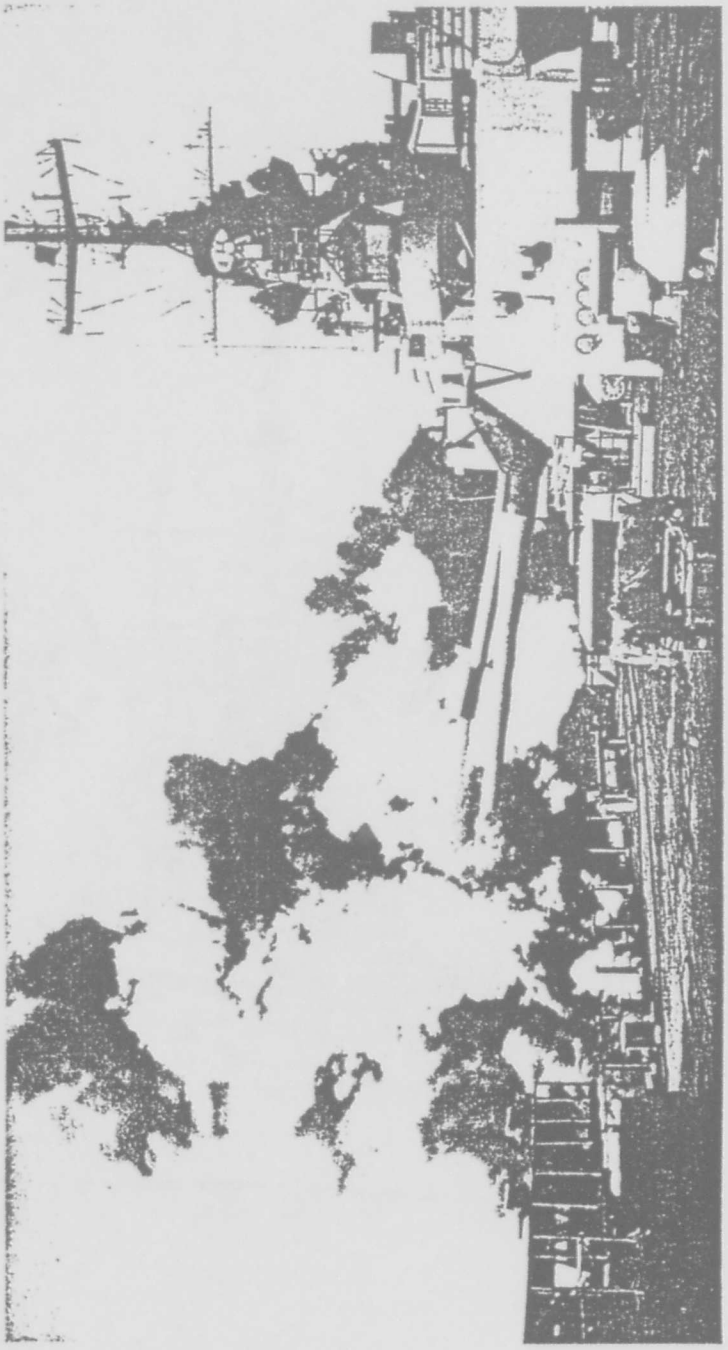


Admiral Graf Spee Scuttled



U.S.S. New Jersey (BB-62)



U.S.S. Wisconsin (BB-64)

GLOSSARY

Barbette - the armored protective cylinder around a revolving turret on a ship

Beam - the width of a ship at its widest point

Displacement - the weight of the water a ship displaces when floating freely, it uses the English long ton (2240 pounds) as the standard of measurement

Draft - the depth of the keel of a ship below the water line

Dreadnaught - refers to battleships designed and built after the British battleship H.M.S. Dreadnaught was commissioned in 1906

Harpoon - the Navy's primary anti-ship missile

Main deck - the uppermost continuous deck of a ship, generally the weather deck; they are numbered from the main deck down

Levels - refers to "decks" above the main deck of a ship; they are numbered beginning at the level above the main deck going up and are referred to as the 0-1 level, 0-2 level, etc

Maritime Strategy - refers to the maritime portion of the National Defense Strategy

Panzerschiff - a german word meaning armored ship, commonly referred to as pocket battleships

Phalanx Close-in Weapon System (CIWS) - a shipboard last ditch anti-air and anti-missile weapon system

Prize court - a national or international court established to determine the validity of the capture of a merchant vessel during commerce warfare

Prize regulations - refers to the laws governing the capture of merchant ships during commerce warfare

RPV - remotely piloted vehicle, a small drone aircraft

RRR - mayday report similar to SOS, it was used to signify a surface raider

Splinter deck - a backup armored deck designed to stop splinters from exploding projectiles and armor fragments from a primary armor belt

Tomahawk - the United States Navy's long range cruise missile

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